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Educational News and Editorial Comment

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The Symbols of Our Faith

Anyone who is familiar with the history of education in the United States knows that the dynamics of public education in this country is to be found in the emergence of the democratic state as a form of political organization. The men who laid the basis of a democratic society during the first half of the nineteenth century were genuinely afraid that their experiment in free institutions would fail, and they had no doubt that it would fail unless measures were taken to cultivate in youth that degree of social intelligence necessary to the performance of civic duties. It is no less true today than it was a century ago that in the program of civic education the very life of the democratic state is at stake. At a time when the democratic way of life is being challenged in a large part of the world, and to some extent by elements in our own population, educational leadership in America cannot fail to accept the challenge; the schools can be and should be made a vital force in maintaining and perfecting democratic institutions on this continent.

Democracy in this country will never be preserved, however, by merely developing loyalty to the democratic ideal, by eliminating snobbery, or by creating attitudes of friendliness and helpfulness. To be sure, the right attitudes, loyalties, and dispositions are im-

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portant, but they are not enough. Neither will it be enough to cultivate the ancient virtues of honesty and sobriety, industry and thrift, tolerance and humaneness. It will not be enough, either, to develop a dogged determination to safeguard such ancient liberties as free speech, freedom of the press, and freedom of religious worship. And finally, it will not be enough to develop integrated personalities—personalities free of anxiety, conflicts, or neuroses. Over and above all these, we must cultivate in youth, and in their elders as well, a deep insight into the workings of our economic, political, and social arrangements; democracy will not survive unless the rank and file of our citizens are equipped to participate wisely in the determination of public policy.

In the years that lie ahead, we shall have to try new ways of doing things in almost every aspect of life—political, economic, and social. In our own generation invention, translated into technology, has changed the manner of our living to an almost unbelievable degree. The great radicals of our day are not the political agitators, the Communists, the Fascists, or the New Dealers; they are the automobile, the airplane, the radio, the mechanical cotton-picker (when perfected). Inventions, great or small, constitute the force that is weaving the very fabric of our social and economic life and compelling us to make new and far-reaching decisions with respect to public policy. The fact is that the impact of invention and technology on our economy is forcing a reconstruction of many, if not most, of our institutional forms. In the area of government significant changes occur, and others appear in the offing. The functions of government multiply now in this area of life and now in that, and nobody seems to be able to see the end. It is not too much to say that in the whole area of social relations, whether of government, economy, or ethics, we are faced with the necessity of adaptation and adjustment. The democratic state can survive in the modern world; but, if it does, it will have to cultivate the spirit of social experiment, invention, and contrivance. Obviously, to participate wisely in the determination of public policy today requires a social insight far deeper than that required to direct the destinies of a simple rural economy such as ours was only a generation or two ago. If the youth of this and the next generation are to meet their

responsibility for the successful operation of the national economy, for the advancement of the level of our common culture, and for the improvement of the quality of individual living, they will have to cultivate a greater breadth and comprehensiveness of thought and arrive at a more thorough understanding of the workings of our economic, political, and social arrangements than their elders have ever done.

As a people we have set our face along the path that leads to an all-inclusive cultural democracy. The schools, the colleges, and the universities of this nation are symbols of our faith that we can solve the problems of human living through trained intelligence and not through the barbarism of brute force. It is no mere figure of speech to say that the battlefield of democracy is in the schoolrooms of the nation. It is here that we must forge the weapons that will insure victory. These weapons of democracy will be trained intelligence, social understanding, a will to act, and a morality that will not yield to mere expediency.

A Project for the Improvement of Teaching

The following statement is quoted from a recent issue of the *New York Times*.

A three-year, $200,000 project, aimed at the improvement of teaching, was begun at the University of Chicago . . . . with the assembling of thirteen educational leaders from coast to coast to collaborate on the problem under the sponsorship of the American Council on Education.

Directed by Dr. Daniel A. Prescott, professor of education at the University of Chicago and regarded as the country's leading authority on emotion in education, this first group of collaborators will spend a year sifting thousands of works and studies on the growth and development of children. They will correlate this material and make it available to educational institutions throughout the country.

They will also seek to aid colleges, universities, and school systems in programs of selective admission of future teachers. . . . .

The project is part of a national program of the council's Commission on Teacher Education in Washington, directed by Dr. Karl W. Bigelow. The General Education Board is financing the new project, established as the service division on child development and teacher personnel. Dr. Bigelow and two field co-ordinators, W. E. Armstrong and C. L. Cushman, University of Chicago professor of education, spent three days in Chicago co-operating in starting the project.

"The work of this division with regard to human growth and development," explained Dr. Prescott, "involves setting up a center of documentation at which will be assembled the wealth of research findings that are constantly being published in this field.

"Here also will be gathered a large number of unpublished case studies of the growth and development of individuals, from various research centers and child-welfare agencies scattered over the country.

"The commission last June selected twenty collegiate institutions and fourteen school systems to co-operate in experiments designed to improve the education of teachers before they enter service and after they have begun their professional careers.

"Especially important concerns of these institutions and school systems are methods and materials by which teachers may be helped to understand the growth and development of children and procedures and devices by which the selection, guidance, placement, and adjustment of teachers may be improved. It is to assist in meeting these concerns that the service division has been established.

"From the standpoint of the school systems the aim is to improve methods of selection of teachers, improve procedures for assigning work to teachers and to help them find means of keeping up the morale of teachers and furthering their emotional adjustment.

"Specialists in different sciences have investigated aspects and published studies on child development, but heretofore there has been no agency which has taken as its sole task the synthesizing of the finds in these various scientific fields."

A Significant Study of Reading Readiness

It has long been recognized that children meet with varying degrees of success or failure in learning to read. In recent years the belief has come to be commonly held that failure in learning to read results, in large measure, from starting the child to read before he is ready to undertake it. Much investigation, therefore, has centered in the problem of identifying the factors which enter into what is known as "reading readiness." The literature on this subject is extensive; plans and methods of determining whether a child is ready to begin reading are numerous; books on the teaching of reading, courses of study, and teachers' manuals accompanying reading books abound with recommendations with respect to tests and ratings to be employed; and a number of reading-readiness tests have been made available. As yet, however, opinion is sharply divergent with regard to the mental, the physical, and the educational characteristics which are most important in predicting reading success.

In view of the grave social and educational consequences that often flow from putting children into reading situations for which they are not prepared, it is highly important that scientific investigation in this area be pushed to a point of conclusiveness. The teachers of the nation are in real need of demonstrably valid instruments for gauging the reading readiness of their pupils. Nor is that all. It is not enough for teachers to be able to say that a child is not ready to begin reading; it is equally important that teachers be able to work out a valid "non-reading" or "reading-readiness" program for pupils who have not yet had the experiences essential for a successful attack on reading.

Teachers and others who are concerned with the problems of teaching reading to beginners will be particularly interested in an investigation conducted by A. I. Gates, G. L. Bond, and D. H. Russell, of Teachers College, Columbia University. The results of the study are published in a monograph entitled *Methods of Determining Reading Readiness*. The study, begun in 1934, "was designed to test the value of practically every type of test, rating, examination, or other means of appraisal which had then been suggested, or which the authors could think of, as a means of predicting reading progress." The conclusions are of such significance that we quote them at some length.

1. From the total list of tests, ratings, and examinations and appraisals employed in this study, those which gave the best predictions of reading ability one, two, or three terms later were measures of reading progress or attainments at the time. This was as true at the time pupils entered school as later. When they enter school, pupils reveal different degrees of mastery of various types of information and skill which influence the process of learning to read.

2. Among the tests used in this study the best for predicting reading progress were: (*a*) tests of word recognition; (*b*) tests of ability to complete a partially told story (a measure of interest in, and grasp of, story structure); (*c*) tests of giving words which end with (or rhyme with) and which begin with the same sound as a given example; (*d*) tests of blending word sounds given orally; (*e*) tests of reading letters of the alphabet; and (*f*) ratings of previous instruction in reading. In this study, tests of ability to listen to, understand, and make use of the teacher's instructions in beginning reading also ranked high in predictive value. . . . .

Aside from these tests, the only others of marked value were the Stanford-Binet mental age and tests of auditory acuity.

3. The correlations of the several types of tests mentioned in paragraph 2 and reading progress vary appreciably with the emphasis which the pupils place on various techniques in learning to read. Thus if the pupil uses letter naming extensively, the correlation of a test of letter recognition and reading progress will be relatively high. From this it follows that to the extent that the teacher's methods influence the pupil's techniques of learning, they also affect the predictive value of tests. Thus if a teacher effectively emphasizes early phonetic attack, tests of blending, rhyming, etc., are likely to give higher correlations with reading progress in her class than in the class of a teacher who places less emphasis on the phonetic approach.

4. With few exceptions, the best tests for predicting reading progress are tests of abilities, interests, and techniques which can be learned and, consequently, successfully taught. Reading readiness, in other words, is something that children have acquired in varying degrees; it is something to be taught and not a series of attributes for the development of which a teacher can do nothing but wait.

5. The best reading-readiness testing consists essentially in making an "inventory" of various interests and of the techniques used in reading itself. In principle, testing the reading readiness of a child on entering school is the same as testing reading attainments at any later time from the second grade to college. In all cases, the desirable outcome is not merely the general or total score but an expression of the child's status in each of the important abilities entering into reading at the time and shortly thereafter. It is, in brief, a "diagnostic inventory" of actual reading abilities, techniques, skills, and interests similar in general to those used later in the program.

6. From paragraph 5 and from actual data presented in the report, it follows that it is desirable to give a series of tests of important abilities and techniques at fairly frequent intervals from the time the pupil enters school until he has reached a satisfactorily high level of reading proficiency. The abilities of greatest value for testing are those outlined in paragraph 2 above.

7. The Stanford-Binet mental age gives a fair prediction of reading progress but not as high a correlation as each of several short tests of reading attainments mentioned above. It is a useful addition to a battery of reading-readiness test scores but insufficient alone to predict progress accurately. It is therefore unsound to set up a specific mental age (such as 6.0 or 6.5 years) as essential for beginning reading or to classify children for reading instruction on the basis of mental age alone. Another study has shown that the optimum mental age at best is a range and not a point on the scale and that the level of the mid-point of this range varies greatly with the program employed by a particular teacher.

8. In schools in which classes are large or surroundings noisy or both, it is important to determine the hearing of the pupils and to give favorable positions to those showing poor auditory acuity. In other words, it is necessary that a pupil hear clearly what is said in the classroom. Teachers are sometimes unaware of the difficulties certain pupils have in hearing.

9. Tests and other appraisals which gave positive but lower correlations with reading progress than those already mentioned were: certain group intelligence tests for first-grade pupils including such subtests as range of information, vocabulary, and opposites; tests of perception of digits, geometric figures, Greek words; memory span for letters and digits; and tests of simple associative learning of pictures and geometric figures presented visually.

Still lower in predictive value were various personality tests and ratings; ratings of home background (previous reading instruction excluded), emotional stability, social adjustment, etc. Low correlations were also given by performance tests such as the Seguin form board or Healy picture completion; tests of copying figures; tracing pencil mazes or lines; motor control; handedness and eye-dominance; and various tests of vision.

It should be noted that among the tests of little or no predictive value are many tests and ratings widely recommended in books and articles on reading-readiness testing and teaching.

10. The correlations of tests and reading progress give the key to effective reading-readiness teaching. As far as helping the child to learn to read is concerned, the reading-readiness instruction which develops the skills and interests found to be most closely correlated with reading progress will give the child the greatest help in learning to read and enjoying it. If on entering school child A has a very much higher score than child B in copying geometric figures, a test which shows a negligible correlation with reading progress, increasing their ability in this activity will not help either child to learn to read.

. . . . . .

12. A good reading-readiness test or rating must possess these characteristics:

a) It must show a correlation with reading progress which is high enough to be useful for practical purposes. The following characteristics are really corollaries of this requirement.

b) It should measure a phase of reading or a reading ability which will be taught, learned, and used in further reading progress.

c) It must have satisfactory reliability; it must not be subject to too large an error.

d) It should not give a large proportion of the pupils undistributed zero or perfect scores; it should differentiate. A test may have considerable value as a guide in teaching, however, even when many pupils get zero or perfect scores. For example, it is useful to know what children, even if there are many, can recognize no letters of the alphabet; or to know what children, even if there are few, have markedly defective vision.

Here and There among the Schools

THE items selected for reporting in this issue of the *Elementary School Journal* relate to introducing the school as a subject of instruction in the social-studies program, using the radio as an edu-

cational instrument in school and community relationships, carrying out a program of curriculum reorganization, and making the social studies the integrating center of the work of the elementary school.

Cultivating an appreciation of the public school as a major social institution

All will admit that the public school is a major social institution, and some will hold that of all our institutions it is the most important. Yet it is true that in most school programs the school as a social institution receives no systematic consideration in the curriculum. Future citizens are assumed to absorb a workable knowledge of the schools—to arrive at an understanding of their place in a democracy, of their aims and goals, their curriculum organization, administration, supervision, support, and control—without special instruction. It is safe to say that this assumption is false. Most pupils finish high school, or, for that matter, college or the graduate school, without acquiring any deep insight into the purposes and the problems of the American educational system. Everyone who has gone to school even for a short period of time feels that he is something of an authority on education, and yet it is extremely rare to find a person, even though one may search diligently among university professors, who exhibits an awareness of the problems faced by the schools and the colleges of the country as they attempt to meet their expanding social responsibility. Even teachers themselves commonly fail to understand the flow of consequence from society to school and the counterflow from school to society. Most teachers may be compared to an astronomer who trains his telescope on a single planet, quite unaware that it is a part of a solar system. Teachers train their telescopes on the subject-matter fields in which they pride themselves on being specialists or, at best, on the individual pupil as a developing personality. Rarely do they sense the role that the school might play as an instrument of social control and direction, as a means of directing the course of events.

It is encouraging to note, therefore, that G. P. Young, superintendent of schools in Alamosa, Colorado, is introducing into the social-studies program an evaluation and appraisal of the public school as a social institution. The work was begun last year in

Grades I and II, and the plan calls for extending it upward into the high school. Under the guidance of Superintendent Young, teachers are working out units of study on the teaching of the public school. When completed, these units, which are being developed in terms of definite criteria, should be of interest to teachers in other school systems. Regardless of the value of these particular units, Superintendent Young is setting an example of the kind of thing other school systems might well undertake. Mr. Young summarizes as follows the things which will, he hopes, be accomplished by the program that he is initiating:

It is to be hoped that teaching the public school as a major social institution will perform the following services in the field of social interpretation: (1) assist children in securing factual appreciation of the public school, (2) indirectly supply many adults with facts about schools because the pupils will carry accurate knowledge to their parents and others, (3) help the children formulate an intelligent understanding of the public school as they themselves become adults. A great deal of the knowledge of the schools that adults hold today is dependent on their experiences as pupils in the public school and not on any critical thinking that they have done from other vital angles.

As one considers the possibilities and the obvious neglect, it is not difficult to realize that teaching the public school in the school is a very important part of the whole program of social studies.

Serving community and school needs with radio

A recent issue of *Education by Radio* carries the following interesting account of the way in which radio programs are being employed in the schools of Greensboro, North Carolina.

Station WBIG, Greensboro, North Carolina, has been conducting a series of programs in co-operation with the public-school system and is reported to have made a valuable contribution to education in that city.

In one series, thirty-five were public-relations programs which presented both various school activities and pertinent problems of vital concern to parents. A second series of twelve weekly broadcasts was sponsored by the Vocational Educational Department for the purpose of presenting to students important factors in choosing a vocation.

To stimulate better club programs and at the same time to give more students the educational experience of appearing before the microphone, a third series of sixteen interclub broadcasts was presented by remote control from the senior high school. An interclass series of twenty-one broadcasts designed to develop creative thinking among students and to enrich classroom work in various departments of study was given.

A local evaluation has indicated the following results of the series: first, it tended to make administrators, teachers, and students more radio-conscious, thus paving the way for program expansion; second, it involved all the school units, thus making the radio project one which gave opportunity to pupils of all age levels; third, it proved that a local school system might prepare and present radio scripts which would help to meet the needs of an inadequate curriculum; and, fourth, it indicated what would be required in order to make the most effective use of radio throughout the entire school system.

The radio is also being used effectively in Cincinnati as a means of informing the public about the work of the public schools. We are indebted to John F. Locke, of the Department of Community Relations, for the following statement describing the use of the radio in Cincinnati.

The use of radio as an aid to acquainting the public with a better understanding of its schools has had an increasing use yearly, until this year when three separate series of programs were broadcast. One series has been a daily fifteen-minute in-school unrehearsed broadcast designed to show the actual work of the classroom. The second series has been a weekly fifteen-minute evening broadcast designed to interpret the work and accomplishments of the schools in general. The third series has been a weekly half-hour broadcast stressing safety education and portraying, as its contribution to the city-wide safety program, the result of the added emphasis given to this type of instruction in the Cincinnati schools.

Curriculum reorganization in the public-school system of Cincinnati

From John F. Locke, of the Department of Community Relations of Cincinnati public schools, we have received the following statement describing the important curriculum developments that are being carried out in the Cincinnati schools.

Important curriculum developments and plans for improvement in eight fields of instruction, reading, safety, practical arts, special classes for mentally deficient children, arithmetic, language, social studies, physical education and health, are in progress in the Cincinnati Public Schools. . . . . The first concern of the curriculum department has been the teaching of reading in the primary grades. Recognizing that the success of children throughout their entire school career is dependent, in large measure, on their ability to read, it was felt important that the best educational practices regarding the teaching of reading to very young children be incorporated into the reading programs in the schools. Last year a revised tentative course of study developed by a committee of teachers was placed in the schools for tryout purposes. On the basis of this try-

out experience, a final course of study in reading is ready for use in the school year 1939–40.

Under the direction of G. H. Reavis, director of curriculum, committees of department heads, principals, and teachers, to the number of five hundred, have been analyzing the problems and developing an improved curriculum in each of these eight fields. This process of revision of courses of study will be continued next year.

An increasing use of visual aids in instruction is a second phase of Cincinnati's curriculum-development program. A central library of visual aids, financed co-operatively by the Board of Education and parent-teacher association groups, has already assembled a basic collection of about five hundred films carefully selected for their educational value. Most of the films are owned by the library, others are borrowed from the State Department of Education, and the remainder are supplied by commercial firms. The films circulate among the eighty-seven schools and are distributed to the schools by an every-other-day delivery system. A few projectors, on a circulation basis, also are provided for those schools which at present do not have projectors of their own.

Integration of the curriculum with the social studies

From William T. Darling, superintendent of schools at Wauwatosa, Wisconsin, we have received a mimeographed bulletin of some seventy pages entitled "A Guide for Planning the Social-Studies Experiences of Elementary School Children." The first part of the bulletin is devoted to a discussion of the purposes of education for the Wauwatosa schools, the second part presents the general plan for the social-studies program, and the third part contains a description of the procedures to be followed in planning units of instruction. In the last part a good deal of space is devoted to the materials of instruction which may be utilized in developing units. Social-studies themes are made the integrating centers for as much of the school curriculum as seems to be practical. Those who are interested in working out a correlation of all school subjects with the social studies will find this bulletin suggestive.

A Guide to the Selection of Broadcast Receivers and Phonographs

Teachers and administrators who are interested in selecting broadcast receivers and phonographs for classroom use will want to make use of a recent publication of the Committee on Scientific Aids to Learning—a committee of the National Research

Council. Funds employed in its investigations have been supplied by the Carnegie Corporation of New York. The publication here referred to is entitled *Broadcast Receivers and Phonographs for Classroom Use*. The major part of the report is devoted to a "discussion of the factors which should be considered in the selection of broadcast receivers and phonographs for classroom use." Specific answers are given to such questions as: "What is a simple way of comparing receivers?" "What factors influence quality?" "How much volume do you need?" "What frequency range do you need?" "When is sensitivity more important than selectivity?" "Will a midget receiver be satisfactory?" "What should you look for in a phonograph?"

In the Appendix some of the 1939 equipment is described in terms of the factors enumerated in the main body of the report. The information in this part of the report should be especially helpful to school officials, who commonly experience difficulty in obtaining specific information about the performance of radio receivers. To get this kind of information has been very difficult, if not impossible, because manufacturers either do not know how well their sets will perform or will not guarantee information concerning the performance.

We believe that many school officials and teachers will be interested in the following statement quoted from the Foreword of the report.

> The committee believes that a useful service can be performed in advising schools as to the specific models of equipment which will best satisfy their needs. To be most effective, however, such a plan involves the co-operation of educators and of equipment manufacturers. The former must be prepared to tell the manufacturers what performance they desire from a particular piece of equipment. The latter must determine the feasibility of meeting school requirements within the limitations of mass production in order that prices may be kept as low as possible. Co-operation which takes place before the design of an instrument can be much more effective in obtaining suitable equipment for schools than can an advisory service which merely attempts to indicate which particular models of existing equipment are most nearly adapted to school requirements. With models sometimes changed as frequently as twice a year, advisory information tends to be obsolete before it can be placed in the hands of those it is intended to serve.
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> At the present time, the Committee on Scientific Aids to Learning is acting to enlist the co-operation of educational groups, of equipment manufacturers,

and of broadcasters in a plan to obtain broadcast receivers designed with school use in mind, which equipment would be certified in such a manner that an administrator could make his purchases with complete confidence that the certified equipment would properly fulfil its function.

Teachers and administrators desiring additional information about the development of this plan are invited to correspond with the committee.

Later reports of the committee will discuss central sound systems for schools and some recording systems for schools. Persons interested in the reports of the committee should address communications to the director, Irvin Stewart, 41 East Forty-second Street, New York City.

Educational Activities of the Federal Government

The Educational Policies Commission of the National Education Association and the American Association of School Administrators has recently published a study entitled *Federal Activities in Education*. The general purpose and scope of the study, which was prepared for the commission by Lloyd E. Blauch, are indicated by the following quotation from the Foreword.

This statement emphasizes current conditions with no attempt at this point to offer further recommendations with reference to policy or procedure. The relation of the federal government to schools and other agencies of education has already been treated by the commission in *The Structure and Administration of Education in American Democracy* and *The Effect of Population Changes on American Education*.

Publication of this document was authorized by the commission on May 8, 1939. Since that time it has been revised to take account of the recent reorganizations. The document is not a complete review of the multitudinous activities of federal agencies in education, but it is believed that it does cover those of the greatest importance to the conduct of education in the states and local communities.

Under our form of school administration, federal activities in education are by no means exclusively a federal problem. These activities take effect largely through local and state educational agencies and thus become a matter of local and state concern. For this reason, this summary should prove useful to the increasingly large group of students and workers in education who need to have available a concise, up-to-date review of the educational work of the federal government.

Chapters are devoted to "The Land-Grant Colleges and Universities," "Occupational Training, Placement, and Rehabilitation," "Child Health and Welfare Activities Related to Education," "Edu-

cation for National Defense," "Emergency Education Activities," "The United States Office of Education," "Special Conferences and Committees," and "Miscellaneous Educational Activities."

WHO'S WHO FOR NOVEMBER

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MANUAL ARTS AND CRAFTS IN THE GENERAL-EDUCATION PROGRAM

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UNDERLYING ASSUMPTIONS REGARDING EDUCATION

The discussion which follows will be based on two theoretical assumptions about education. The first assumption is that education is an immediate, practical matter; that there are no mysteries about what education is good for and what it will do; that the value of education is to be determined entirely by the degree to which it helps the learner in direct and practical ways to make a better living or to enjoy life more; that the cultured person is simply the person who can best take care of himself and his dependents in honorable ways, who can appreciate and enjoy the widest range of wholesome activities, and who can understand the problems and the outlook of the largest variety of his fellow-men. The second assumption is that it is the business of the school, as the agent of formal education to see that the learner obtains all the different desirable types of training that he would not acquire without going to school. The converse of this statement is that the school does not need to concern itself particularly with providing the kinds of training which the learner is sure to acquire incidentally through his daily living outside the school.

IMPLICATIONS FOR ARTS AND CRAFTS EDUCATION

The significance of the first assumption for education in the practical arts and crafts is plain enough on the face of it. If learning to live successfully and happily in the world in which the pupil happens to find himself is education in the real sense of the word, then to acquire the skills and the understandings needed to make the physical world of things and processes work to his advantage is certainly a matter of first importance in education. Any education that fails to give this practical training, either purposefully and directly or

incidentally, is certainly only a partial education. Yet many young people who are now growing up are, unfortunately for themselves and for society, getting exactly this kind of partial education. The following quotation from Hart describes vividly this condition.

> The city tends, more and more, to take away from children the old community materials of education—work, play, social life, emotional enrichment, the sense of community, and the framework of a personal career. . . . . [It] tends more and more to substitute *talk about things* for the old actual experiences with things. City children see many things, they handle very few. They look on at much, they participate in little. They read about work, they get their hands into little of it.[1]

This quotation leads logically to the second assumption, namely, that the school is chiefly concerned with things which the pupil would not learn outside the school. One of the implications of this assumption is that, as home conditions change, the things about which the school needs to concern itself also change.

Not so long ago in this country all the really important arts and crafts were learned by the great majority of children incidentally as they played about their homes and later worked with their parents on the farms or in the homes and in the parents' workshops. In those days the important things for the school to teach were the elements of literacy, for these were about the only things needed by the children which they would not learn incidentally. For large numbers of children living on farms this situation still holds, at least partially. Even there, however, the incidental, rule-of-thumb education in arts and crafts is no longer nearly so adequate as it once was, for two reasons: first, the farm in these days is much more highly specialized, much more dependent on the factory and the cannery, and much less likely alone to afford a complete incidental training in arts and crafts and, second, modern science has added much information about materials and processes that is not likely to be learned by the imitation of rule-of-thumb methods or by trial-and-error practice. The skills may be acquired that way, but not adequate understandings.

Professor Bode has put this matter amusingly in the following quotation.

[1] Joseph Kinmont Hart, *A Social Interpretation of Education*, p. 6. New York: Henry Holt & Co., 1929.

In the days of my early youth I once taught a rural school. As far as I know, it was fairly representative of the little red schoolhouse that we have heard so much about. My school wasn't red, but it was a one-room affair, it was rural, and it had a curriculum that was limited pretty much to the three R's. Teaching that school, as I look back on it now, was simplicity itself. I assigned the lessons and heard the recitations—that was my job. The pupils learned the assignments and did the reciting—that was their job. When that was over we knocked off and called it a day.

If my methods were simple, my job was likewise simple. There was a great deal of education going on in that community, but most of it had no relation to my school. The pupils learned a great deal about vocations, for example, but my school offered no courses in vocations. The young people learned about them at home—out in the fields and in the kitchen. They got a complete set of ideas about economics and government, but they didn't get them from me. They got them at home. It was the father's prerogative to explain the tariff system and to warn the boys against the Democrats. In matters of religious beliefs the father was usually somewhat less fluent and convincing, but he did what he could, and the rest was looked after by church and Sunday school. Manners and customs were taught and rigidly enforced by the community. In brief, all the heavy work in education was done outside the school. My task was simply to take care of certain skills and information which could not be handled very conveniently at home. Those were "the good old days" in education. A person could teach then without feeling that the burden of the universe was resting on his shoulders.[1]

Certain highly important skills and understandings and appreciations, which many of us learned incidentally as boys on farms or in old-fashioned small-town homes, would help us greatly to take care of ourselves if we should lose the jobs that we now hold, have helped us all along to judge the materials and the workmanship in the things that we buy, and have afforded us a great deal of pleasurable understanding and appreciation in our everyday contacts with the physical world. Yet the average child now growing up in an apartment house will not learn most of these valuable matters at all unless the school provides definitely and generously the opportunities for him to learn them. These things are certainly highly important elements in a good, all-round general education.

AIMS OF ARTS AND CRAFTS EDUCATION

What, then, ought to be the objectives of public-school training in the arts and crafts? A carefully planned curriculum ought to be set

[1] Boyd H. Bode, *Progressive Education at the Crossroads*, pp. 48–49. New York: Newson & Co., 1938.

up, beginning in the very first grade with activities that are appropriate to the grade and carrying through at least to the junior high school level, if not beyond it. This curriculum ought to be an "activity" curriculum in the best sense of the word; that is to say, it should be organized around creative activities rather than around formal learning exercises or any kind of textbook materials. It should be planned to cover a wide range of activities. If such a curriculum were organized and carried through all the grades, up to and including the ninth at least, it would be possible to cover, not too superficially to be of value, the very large area that I am about to map out.

As has already been indicated in part, I should like to see the courses in arts and crafts undertake to cover the following broad aims.

1. Familiar, appreciative acquaintance with the physical world of everyday experience, including:
   a) Materials
   b) Processes
   c) Machines
   d) Sources of basic commodities
2. Basic agricultural understandings
3. Skills in the use of the simple tools employed in the basic trades and crafts
4. Appreciation of fine workmanship and fine materials

Each point in this outline will be discussed briefly.

1. The first aim means, as indicated in the outline, an understanding of the materials, the processes, the machines, the qualities, the sources, and other important information about the basic commodities used in making the things that we all buy and use. Thus, at some time during his school career the pupil would work with most of the kinds of cloth of which clothing is made, with most of the kinds of wood that are commonly used in houses and furniture, with most of the important synthetic building materials that are now coming on the market, with cement and bricks and tile, with leather, and with all the other more commonly used materials. He would have a chance to get firsthand experience and practice in taking apart and putting together electric motors and gasoline engines and all the other working parts of a modern automobile. He would have enough experience in working with felt and woolen materials to know

the difference between good and indifferent tailoring when he sees it. These are only a few examples of the experiences in arts and crafts that the school should give the pupil.

2. It is highly important that practically all children should acquire a good, firsthand experience in the basic activities of farming. This experience would have to be provided in school gardens or perhaps in some sort of summer camps that may yet be organized as a part of the school system, or in both. This training is in itself a large field which includes a great number of skills and a vast amount of information.

How hard it is for persons, who have not secured these basic agricultural understandings in childhood, to acquire them in adulthood I did not begin to appreciate until during the early days of the depression I tried, as a member of a county relief committee, to teach the unemployed to use the seed and the fertilizer and the garden plots provided them for growing food for themselves. I realized then how rich I was, by comparison with them, in the possession of the basic knowledge of farm craft that I had acquired incidentally in my childhood on the farm. The man who knows how to cultivate the soil, who knows the peculiar characteristics of each of the twenty-five or thirty most valuable small fruits and vegetables, who knows how to care for and how to milk a cow, who can economically cut up and preserve meat from hogs that he has raised himself, who knows how to keep and care for chickens, will never be quite so destitute in a small industrial town or village, or even in the city, as is the man who is not able to do these things. The cramped quarters of the city and the uninspiring factory jobs have robbed a large number of our people of these fundamental means by which a man can eke out an existence for himself when society is no longer willing to pay him wages for a highly specialized job or when the wages he earns are inadequate for his family.

3. Perhaps what I am about to include as my third division is implied in what has already been said, but, lest it be overlooked, I should like to discuss it separately. At some time during the course of his school career, the child should acquire skill in the use of all the simpler tools that are employed in the basic arts and crafts. He should be able to paint the floors and woodwork in his own house

without wasting too much paint or making too much of a mess of the job. He should be able to mix the cement and to construct a reasonably good-looking walk or flower bed or fish pool in his own back yard without employing anybody to help him or to tell him how to do it. He should be able to make minor, if not major, repairs to his own automobile.

These abilities should be acquired, not primarily because we assume that most persons will ever be called on to do their own painting or their own automobile repairing, but because it is worth while to know these things just for the fun of knowing them. The recipient of a ten-thousand-dollar-a-year income might make a garden or a fish pool, not because he could not afford to hire somebody to do these things for him, but because the doing of them gives him pleasure and relaxation and perhaps satisfies urges that he no longer is able to satisfy in his regular work.

However, the practical utilitarian value of being something of a jack-of-all-trades should not be depreciated. In a highly competitive world, where jobs are scarce, the odds are most decidedly in favor of the man who can do a variety of things well. In a period of depression, when work at highly specialized, highly mechanized jobs is hard to secure, the general handy man is at an even greater advantage than ever because he can live on much less in his own home; or if he does not own his home, he can often work out a large part of his rent by making improvements in the house in which he lives. He is much more likely to be able to find temporary and part-time employment than is the highly specialized machine operative who has to be given a specific job and be looked after by a foreman before he can make himself useful to society.

4. The fourth major objective of arts and crafts education in the public schools is the ability to recognize and appreciate fine workmanship and fine materials in the things that we make or buy and use. This objective includes not only an appreciation of such utilitarian qualities as substantial construction and sound materials but also the qualities of beauty of line and color and form. It is trite to say that one of the unfavorable consequences of the development of the machine age has been a depreciation in both the beauty and the quality of many of the things that we use. Along with this deprecia-

tion has come a loss of the creative satisfaction that the workman used to get from his craft. Efforts to restore some of these qualities ought to be made through the program of arts and crafts as a part of general education in the public schools.

PROBLEMS PRESENTED IN CARRYING THROUGH AN ADEQUATE PROGRAM IN ARTS AND CRAFTS EDUCATION

The carrying-through of an adequate program of arts and crafts education such as has here been described in general terms would involve finding answers to a great many specific questions. Some of these are large questions of educational policy, and some are involved administrative questions.

The following are examples of some of the broad questions of policy: Just what is the place of fundamental arts and crafts work in the elementary schools? Exactly what things ought to be attempted? How can an adequate program be financed in small schools? In what grades should the work begin? What kind of teachers will be required? What should be the character of prevocational and practical-arts training as a part of all general education in the high school? Should all pupils be required to take a minimum amount of work in arts and crafts somewhere in the high school or the junior high school? If so, how much should they take? Exactly what should be included? How should general education in arts and crafts differ between boys and girls? Should it be provided at the junior or the senior high school level or both? Ought pupils who are preparing for college and for professional work be required to take it? The answers that I would give to some of these questions have been clearly indicated in the preceding discussion. The answers to some of the others I should not venture to make without knowing much more than I now do about the issues involved.

Other questions arising in connection with such a program are questions that concern the specific methods and materials to be used in teaching. Examples of these questions are: What basic equipment is necessary to do the work that ought to be done in each of the grades of the school or in any particular kind of school? What variety and quantity of working materials will have to be provided for the pupils? What methods of teaching are most effective and eco-

nomical for all the different phases of the work in each grade? Such questions as these cannot be answered by the administrator. They are questions that have to be worked out by the persons who are actually in charge of instruction and who are specially prepared for it.

Those with special training and interests also have the responsibility of seeing that arts and crafts education comes to occupy the place which it ought to occupy in the school. To fulfil this responsibility, these teachers must co-operate in doing some promotional work.

Since adequate facilities for teaching arts and crafts are likely to be much more expensive than facilities for teaching some of the old, standard school subjects, and since the classes that a teacher can handle in the arts and crafts are likely to be smaller than those which a teacher can handle in some of the old subjects, the cost of training in arts and crafts is likely to be relatively high. High cost is one of the chief factors that have stood in the way of a much faster development of the arts and crafts field during the past half-century. If, for example, an adequate training in basic agricultural understandings is to be given in the cities, it will be necessary to provide for rather large amounts of land for school gardens, as well as for excursions to the open country where the pupils may observe and participate in some of the larger projects in agriculture. Opportunities for employment at actual paid work in the open country during the summer might be found. One of the few good things that have been done in Nazi Germany, for example, has been the development of summer camps for city children, where they have a chance to acquaint themselves with what goes on in the forests and on the farms. All this training would be expensive, and for that reason alone it is difficult to initiate and carry through.

The other chief obstacle to extending arts and crafts education lies in the fact that the general public as well as the people who control the schools do not yet have a clear vision of its importance in general education. If the teachers of the arts and crafts work in the schools were themselves to get the broadest and the clearest possible vision of their jobs and then at every opportunity were to go to the people who have control of the schools and to the intelligent, interested

citizens of the community and explain what they are doing, there is no doubt that the common sense of a majority of the people would soon back the arts and crafts program to the limit of the resources of the community. This job of promotion has to be done by the arts and crafts teachers themselves; it is their special interest; there is nobody else to do it.

Some of the conservative workers in school administration will probably consider that I have mapped out a wild-eyed, extravagant program, of dubious value at best, and certainly too expensive to be seriously contemplated in most schools. I do not think so. When one considers the large amount of money being spent by the federal government for the Civilian Conservation Corps camps and other youth activities that are largely planned to give temporary remedies to problems for which more substantial permanent solutions must later be sought, the idea of spending more money for education in the practical business of living does not seem at all unreasonable. Again, when one considers what some of the European countries are able to raise for the support of armaments programs—to say nothing of what this country is spending for such purposes—the cost of providing a type of education that is adapted to the needs of the great number of young people who require education and direction does not seem at all great. When, in addition, one considers the fact that the federal government and the states and the municipalities together are now spending several billions of dollars each year for the relief of destitution and unemployment, a part of which certainly is to be attributed to failures in education, one might even come to consider that the possible costs of a complete program of vocational education, of arts and crafts education, and of adult education along practical lines would be an economy rather than an expense. It is up to those of us who think we see the vision and understand the problems to go out and do the necessary missionary work so that others also may see.

HOW TO HELP THE STUTTERER

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THERE are five schools of thought regarding the cure of stuttering. These approaches deal with psychoanalysis, the auditory image, the visual image, mental hygiene, and cerebral dominance. This article will deal with the two which are most widely used in the United States: the psychological approach and that based on the idea of cerebral dominance.

THE PSYCHOLOGICAL APPROACH

Speech education is really speech re-education. The end is more adequate speech; but more important than that is the objective of producing individuals with well-developed personalities, who are socially integrated and equipped to take their places in a creative society. Elwood Murray, head of the speech department at the University of Denver, in his classes defines an integrated person as one who is "free" to express his thoughts in words and tone qualities, without tenseness, inhibitions, and blockages.

Educators must cease to think of stuttering simply as a speech defect and begin to consider it as an accompaniment of other simple and complex advertisements of a basic neurophysiological deviation. Before attempting to correct a child's speech, one must study the child's total personality. Each stutterer is an individual problem. Although general principles may be the same for a number of stutterers, specific indications vary for one and another. Each stutterer must be studied from all angles, and remedial measures must be adapted to his needs. A person's speech often reveals that person's inner world and his adjustment to his outer world. It often indicates strains and tensions resulting either from some physical handicap or from some emotional maladjustment.

Articles and talks on stuttering are often criticized because au-

thorities deal with causes when the layman wants to hear the magic formula for a cure. There is no such formula. If a speech correctionist would help a child overcome stuttering, he must first ascertain why that child stutters. Certain exercises and other remedial measures will be beneficial, but they are useless tools unless the case has been diagnosed and approached scientifically. When the speech worker has found the reason for an individual's stuttering, then and only then does he hold the golden key to the cure.

Every person is the result of two factors: heredity and environment. It must be determined what the stutterer has brought into the world with him in the way of so-called "native equipment" and what has happened to that equipment since birth.

Travis[1] suggests that in the diagnosis of a corrective case, the following information should be obtained: the history of the individual, a physical examination, an intelligence examination, a personality examination, measurements of special abilities and disabilities, and measurements of educational achievements and progress.

Sudden emotional shocks and prolonged strain must be considered. The behavior of the stutterer should be observed in a wide variety of situations. The emotional social behavior should be dealt with thoroughly. Any unsatisfactory social adjustment may disappear as stuttering disappears, but every attempt should first be made to stabilize emotional behavior because, conversely, speech improvement follows the elimination of maladjustment. In some cases removal of stuttering will repair a mood-ridden personality. In others stabilizing the personality will lead to improvement of speech.

Consider, for example, the case of a very bright stutterer in Grade VII. In spite of an apparently strong body, unusual intellect, a naturally bright and sunny disposition, and excellent home environment, this boy displayed a violent temper and resentful attitude toward both teachers and pupils. With each emotional outburst his stuttering increased as his mood grew blacker. It was discovered that he was brooding over a tragic instance which had occurred in his early life. While this memory was not thought to be the sole cause of his stuttering, it was recognized as a contributing factor.

[1] Lee Edward Travis, *Speech Pathology*, pp. 68–94. New York: D. Appleton & Co., 1931.

Here was an instance of maladjustment and stuttering, each reacting on the other. The problems of the correctionist were, first, to lead the boy to view this tragedy normally and thus erase from his memory a haunting picture and, second, to convince him that he must, largely by his own effort, stabilize his personality. Without the boy's knowledge, the co-operation of parents, teachers, and several friends of the child was enlisted. After a year's effort on the part of all concerned, the boy was adjusting himself well to his environment and his speech showed marked improvement.

Fear and emotional anxiety are great causative factors in stuttering. The problem is to find out what in the emotional life of the individual has caused the anxiety or fear. The old method of guessing is being supplanted by more accurate means of locating the speech difficulty. Often the whole gamut of tests will be required.

One who would work with a speech-crippled child must gain the child's confidence. This step is most important, for the child may have reached the stage of self-consciousness and sensitiveness. An understanding teacher will talk with him, reason with him, and by all means listen to him. Frequently a stuttering child will not discuss embarrassing speech situations with his family, whom he knows to be anxious and worried about his defect. Yet he finds immeasurable consolation in talking over his difficulties with an understanding adult who will offer encouragement and suggestions for meeting trying situations. Such a child never tires of hearing that someone regards his difficulty lightly and feels hopeful of his overcoming it. An understanding attitude between teacher and pupil is entirely possible without any infringement on the status of either. An optimistic state of mind is helpful: the child who believes that he will overcome his difficulty has a doubled chance of doing so. Since he stutters with the expectancy of stuttering, he is likely to improve as this expectation is removed.

RELATION OF CEREBRAL DOMINANCE AND STUTTERING

The cerebral-dominance approach to stuttering, as explained by Travis, is recognized as a most important consideration in the case of many stutterers. To understand how this approach operates, one

must be familiar with the neuromuscular basis of speech. The point of view of Travis is as follows:

> In most cases the act of stuttering is a neuromuscular derangement secondary to general reduction in cortical lead control. . . . . In the stutterer, instead of nervous energy being mobilized by one center of greatest potential, it is mobilized by two centers of comparable potential . . . . there is produced in the peripheral speech organ an undesirable competition in the resulting muscular movements. . . . .
>
> The neurological basis of stuttering, which is a lack of a sufficiently dominant gradient of excitation in the central nervous system, is largely a pathophysiological variant. We may think of its occurrence in terms of a margin of dominance which ranges in different individuals from zero amount to a very large and safe amount.[1]

Many children become stutterers because of a change of handedness early in life. The parents of these children, wishing them to conform in every respect, during earliest childhood carefully removed playthings from the left hand and placed them in the right, taught the little child that he must manipulate his spoon with the right hand. Little John was the victim of such circumstances. When he started to school, an ambitious teacher taught him to write laboriously with his right hand even though John naturally grasped his pencil with the left. With what result? John, whose right cerebral hemisphere was natively dominant, struggled obediently to use his right hand, and thus he built up dominance in the cortex of the left cerebral hemisphere also. The conflict which ensued caused lack of muscular co-ordination. The most obvious result of this conflict in cortical lead was that John stuttered. Finally the case was diagnosed; the child was allowed to use his left hand in preference to the right, dominance in the right cerebral hemisphere being thus restored; and the stuttering disappeared. His special problem was to learn control of the movements of the speech organs.

In such involuntary rhythmical movements as those of the diaphragm, tongue, lips, and lower jaw, the stutterer differs distinctly from the normal speaker in regularity and rate and extent of movements. Hence rhythm should be developed.

How shall we proceed in a case of confused cerebral dominance?

[1] Lee Edward Travis, *op. cit.*, p. 96.

First, ascertain which hand the Creator meant the child to use. This knowledge may be obtained by questioning the child, questioning his parents, securing a speech history, observing his writing and muscular activities, administering a laterality test, and having the child, while blindfolded, write with both hands simultaneously. In the last-named activity he is likely to write normally with his "lead" hand and to produce mirror script with the other.

Since the child stutters with the expectancy of stuttering, it is well to place him in situations where no stuttering occurs, such as choral reading, reciting with victrola records, singing, and whispering. Writing and speaking simultaneously is an excellent exercise calling forth muscular co-ordination. Voluntary stuttering should be taught. Certain exercises for agility of tongue and lips are splendid.

Success in speech activities is realized in two directions: (1) Confidence is inspired, and fear of speaking is reduced. (2) A dominant gradient of excitation is established and sustained.

CERTAIN SOCIAL-STUDIES CONTENT OF CHILDREN'S LETTERS AND CONVERSATIONS

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*

MUCH research has been directed at the problem of selecting content to be taught in the elementary school. Most of this research, however, has been devoted to the skill fields, only a small part of it having been concerned with what to teach in the social studies.

Old patterns for the grade placement and the content of material in the primary social studies are still used in most of the newer books being published. It is still desirable, apparently, for children in Grade I to study about home and family; in Grade II, about community activities and agencies; and in Grade III, about Indians, Eskimos, etc.

The basis for teaching children in Grade II about postmen, firemen, and policemen, as the most desirable social-studies material for them, is no more apparent than the reason for the old placement of long division in Grade IV, which existed for many years. In spite of the fact that the social-studies field is a difficult field in which to work and one about which there is great disagreement, some beginning should be made in the accumulation of objective data that can be used in determining the nature and the grade placement of the content to be taught. One way to begin might be to try to find the nature and the extent of children's social-studies understandings at the different grade levels.

PURPOSE OF THIS STUDY

The best criterion of children's understanding of social attitudes is undoubtedly their behavior in various situations. To make an analysis of children's behavior is difficult when such analysis is limited to the time that pupils spend in school.

A second criterion of children's understanding of social attitudes is found in their expressions to one another. A knowledge of some of the social-studies content that children write and talk about when they feel free to express themselves to one another should give at least some indication of the social-studies material that children can understand and should be helpful in determining which material might be first taught in a given grade to serve as a basis for additional learning experience.

An analysis of children's voluntary letters and conversation should discover some topics that children discuss which have to do with social studies. The things about which children talk or write to one another ought to make a partial list of things about which they have at least some information. The purpose of this study was limited to a discovery of those topics mentioned in children's letters and conversation that have to do with their relations with other persons.

THE METHOD OF INVESTIGATION

The amount of material examined was not large, but the analysis necessitated much sorting, recording, and tabulating. The letters, while limited in number, represented widespread distribution by states and also by rural and urban localities. The conversation was all secured from seven of the elementary schools located in Colorado Springs, Colorado, these schools representing a range of economic environments from the least to the most favored. The material used and the sources of it are shown in Table 1.

In the first analysis made of the letters and the conversation, a record was kept of all topics expressed by the writer of each letter or the participant in each conversation. These were in the form of definite statements containing either generalizations or specific facts, both of which could be tabulated readily under key expressions. Some statements contained partial or incomplete meanings, and an attempt was made to tabulate them under the key expression to which they seemed to be related. In this analysis it was almost impossible to tell whether the partial meanings used were incomplete because of lack of knowledge or because of lack of opportunity to express them more completely. For this reason it was difficult to tell

which of these partial meanings might represent an adequate understanding for a boy or girl at a given grade level.

Two additional problems have been planned as a continuance of this exploration. In the second investigation the plan is to take a few common key expressions from the results of the first study and, through individual interviews, probe rather intensively the degree and the extent of understanding which primary children have of the expressions at the three grade levels. With these results a third study will then be attempted in which the findings will be compared with the content of some representative social-studies books for the primary grades.

TABLE 1

AMOUNT AND SOURCES OF MATERIAL ANALYZED

Grade	Letters			Grade	Conversation		
	Number of Letters	Number of States Represented	Total Number of Running Words		Number of Children Observed	Number of Children Participating	Total Number of Running Words
I.....	78	14	4,822	I.....	481	263	5,138
II.....	176	30	14,406	II.....	393	178	3,844
III.....	397	33	47,766	III.....	407	205	3,954

In this first study, after all statements had been listed under key expressions, that is, as generalizations, those which had to do with children's relations with other persons were selected. The interpretation placed on children's personal relations included working and playing together as well as all other relationships which constitute any part of the social process of living with others, whether in the family or outside the family group.

It is impossible, because of space limitations, to include a list of the statements given under all the key expressions. The entire list, however, is on file in the writer's office. In the case of the conversations, a complete stenographic report was included under the various key expressions. A few illustrations are included to show the nature of the material which has been given under three of the selected key expressions shown in Table 2. These key expressions are: (1) "Expressing concern and interest in the health of others," which occurred

in all three grades in letters only; (2) "Recognition of need for obedience to older persons and to rules," which occurred in conversations only; and (3) "School activities and relationships," which occurred in all three grades in both letters and conversations.

Expressing concern and interest in the health of others [letters]

Grade I.—"Mamma doesn't feel good."

Grade II.—"Dad is sick with the flu."

Grade III.—"She has been operated for appendicitis."

Recognition of need for obedience to older persons and to rules [conversations]

Grade I

First boy: "I can whistle with my hands."

Second boy: "Maybe you can, but you better not."

Grade II

First girl: "Ask your mother if you can come up to my house Saturday and we'll go bike riding."

Second girl: "My mother won't let me play out in the street with my bike, so I guess I can't come."

Grade III

First boy: "Raymond, let's you and me do our sentences together."

Second boy: "The teacher won't let us. She wants everybody to do their own work."

School activities and relationships [letters]

Grade I.—"Mary went to school with me."

Grade II.—"We have to buy all our schoolbooks here."

Grade III.—"They don't have any weaving in this school."

School activities and relationships [conversations]

Grade I

First boy: "I thought you said we would have a long play period."

Second boy: "We can't go out until after we read. We have to do our lessons first. That's why we come to school is to learn something."

Grade II

Boy: "Blue is my favorite color."

Girl: "It's mine, too, so let's sit at the same table and use the same jar of paint. That way someone else can have the other jar. Did you come over Saturday and work on the play?"

Boy: "I didn't come last Saturday, but I'm going to come this Saturday. That will be more fun than staying at home."

Girl: "I don't have anyone to play with at home; so I'd just as soon come here. We have a lot of fun."

Grade III

First girl: "Why does the teacher put the flowers in the window?"
Second girl: "I think it's so they can get sunshine."
First girl: "Why do they need sunshine?"
Third girl: "The sun does them good I know. My mother takes the baby outdoors in the sun every day. She says it makes her grow."

COMPARISON OF THE SOCIAL-STUDIES CONTENT OF THE MATERIAL

From the first-grade letters twenty key expressions were selected; from the second-grade letters, twenty-six; and from the third-grade letters, thirty-two. From the free conversations similar selections were made which resulted in eighteen key expressions at the first-grade level, nineteen at the second-grade level, and nineteen at the third-grade level.

A composite list of the key expressions selected from the voluntary letters of primary-grade children contained thirty-five generalizations, each of which occurred in at least one of the three grades. A similar list common to the free conversation of primary children contained twenty-eight generalizations. Table 2 gives a composite list of fifty key expressions made up from these two lists. Thirteen of the key expressions were common to both lists, while twenty-two of the key expressions in the combined list were found only in the letters and fifteen were found only in the conversations.

For purposes of comparison the frequency of the key expressions are expressed in percentages. The percentage of total number of letters at each grade level containing statements related to given key expressions and, similarly, the percentage of conversations containing statements are given for each grade.

The lists of key expressions for letters and for conversation were formed independently. No attempt was made to base one list on the findings of the other. Key expressions in each list at each grade level were added as the analysis of the material justified their appearance as generalizations. Specific statements showing similarity of meaning were grouped, and the key expression which seemed to be most descriptive and inclusive of this group of statements was thus determined.

The key expressions, or generalizations, found in the free speech of primary children seem more mature in nature than those found in

TABLE 2

KEY EXPRESSIONS FOUND IN VOLUNTARY LETTERS AND IN FREE CONVERSATIONS OF CHILDREN IN GRADES I, II, AND III

KEY EXPRESSION	PERCENTAGE OF LETTERS WHICH CONTAINED STATEMENTS			PERCENTAGE OF CONVERSATIONS WHICH CONTAINED STATEMENTS		
	Grade I	Grade II	Grade III	Grade I	Grade II	Grade III
Admiration for other people	.....	.....	.....	1	2	4
Associations with teachers	9	11	15	.....	.....	3
Attraction between sexes	.....	.....	.....	.....	.....	9
Care of property belonging to others	.....	.....	.....	4	3	4
Comparing self with others	4	.....	.....	.....	.....	.....
Competition with others	.....	1	5	2	6	2
Consciousness of being a member of a group	.....	8	5	.....	5	.....
Consideration of others	.....	.....	.....	4	6	2
Consideration of safety of others	.....	.....	.....	.....	4	2
Co-operation with another person	.....	.....	.....	12	.....	.....
Co-operation with members of a group	.....	.....	.....	.....	5	3
Desire for the company of others	10	4	6	.....	.....	.....
Desire for social approval and recognition	17	6	1	1	5	3
Disapproval of the action of others	.....	.....	.....	.....	3	4
Explanation of church activities	4	9	4	.....	.....	.....
Expressing concern and interest in the health of others	8	20	25	.....	.....	.....
Expressing consideration for others	.....	.....	6	.....	.....	.....
Expressing gratitude to others	19	15	15	1	3	.....
Expressing interest in babies	4	5	8	.....	.....	2
Expressing interest in building	.....	.....	2	.....	.....	.....
Expressing interest in children	6	18	7	.....	.....	.....
Expressing interest in the death of people	.....	.....	2	.....	.....	.....
Expressing interest in groups of people and their activities	.....	.....	8	.....	.....	.....
Expressing interest in others	6	9	.....	.....	.....	.....
Expressing self-confidence to others	.....	.....	.....	1	.....	.....
Extending hospitality to others	.....	12	3	.....	.....	.....
Family activities and relationships	19	16	12	3	6	4
Having fun with others	5	7	12	.....	.....	.....
Helping others	.....	.....	1	5	3	5
Independence of others	.....	.....	.....	.....	5	.....
Participation in dramatics	6	5	10	.....	.....	.....
Playing and enjoying recreation with others	22	16	34	6	8	12
Politeness to others	.....	.....	.....	.....	4	4
Receiving gifts from, and making gifts to, others	.....	7	9	.....	.....	.....
Receiving help from, and giving help to, others	5	2	.....	.....	.....	.....

TABLE 2—*Continued*

Key Expression	Percentage of Letters Which Contained Statements			Percentage of Conversations Which Contained Statements		
	Grade I	Grade II	Grade III	Grade I	Grade II	Grade III
Recognition of another's ownership of property	10	.....	5	3	.....	.....
Recognition of desirable qualities of appearance in others	.....	6	5	.....	.....	.....
Recognition of good performance by others	.....	.....	.....	.....	.....	4
Recognition of health relationships with others	.....	.....	.....	1	.....	.....
Recognition of home membership	9	7	5	.....	.....	.....
Recognition of need for obedience to older persons and to rules	.....	.....	.....	3	4	7
Recognition of uses of transportation	.....	.....	12	.....	.....	.....
Remembering and being remembered by others	.....	2	2	.....	.....	.....
School activities and relationships	18	35	50	16	22	26
Selfishness in dealings with others	.....	.....	.....	1	1	.....
Sharing with others	.....	2	5	12	10	3
Showing affection for others	6	3	1	.....	.....	.....
Showing interest in communication with others	.....	.....	25	.....	.....	.....
Sympathy for others	.....	5	3	.....	.....	.....
Working with others	8	6	5	1	.....	.....

their voluntary letters. Social conduct and behavior are more often represented in the speech than in the letters. In other words, the generalizations based on conversations furnish more information relative to the pupils' relations with other persons than do the concepts represented by the key expressions found in the letters. This result is perhaps natural, since conversation represents a more social situation than does letter-writing. Such key expressions as "Sharing with others," "Co-operation with another person," "Care of property belonging to others," and "Consideration of others," which are among those of highest frequency in the oral list, are general in nature and more advanced in type than "Associations with teachers," "Desire for social approval and recognition," "Family activities and relationships," "School activities and relationships," which are more definite and objective in character and which are among those of highest frequency in the letters.

Greater commonness or overlapping exists between the lists of key expressions in the letters or the conversation at the three grade levels than exists between the lists found in letters and conversation at any single grade level.

It now seems that a wiser course would have been to have the proportion of conversational material between grades similar to the proportion of letter material in order that similar comparisons might have been made. However, the difference in the nature of the ideas expressed in the free speech from the nature of the ideas found in the letters remains consistent so that some comparison of the two fields is possible.

In the conversations reported at the third-grade level there is a new idea, which has been designated in the list of key expressions as "Attraction between sexes." The emergence of this interest, as found in the conversation of third-grade children, was pronounced and indicates one type of development and the growth of a new interest in relations with other persons.

CONCLUSIONS

One noticeable result of this study is the evidence of the interest which boys and girls take in the school and its activities. After the home and the family, the school is certainly the social agency which most affects the thinking and the living of the children. Much of what the children tell about school is incidental to the school's program, such as their friendships and rivalries with other children, their impressions of teachers, and their hopes, ambitions, and achievements. The material has, however, a distinct bearing on the children's relations with other persons. Apparently the school, furnishing, as it does, a real experience, functions more effectively in the development of social relationships than do some other community agencies and services, which are often advocated as topics for study by primary children.

Another conclusion which seems justified from this investigation is the fact that there is steady progress, from Grade I through Grade III, from simple definite statements showing very incomplete understanding to more detailed statements showing more adequate understanding. This growth is most easily seen in the case of a key expres-

sion common to all three grade levels, as in the specific illustrations of statements and conversations previously given, and is more noticeable in the case of the letters than in the case of the conversations.

Some comment should be made concerning the importance of language as a factor in this study. It has been stated frequently that children must have rich, clear, complete, and accurate concepts in order to think and to express themselves intelligently and effectively. While it is possible that behavior patterns would be the best criteria of children's social understandings, probably language is the next most valuable means to use in discovering these understandings. Samples of two forms of language expression, voluntary letters and free conversations, have been used in this study, but they are not inclusive of all occasions on which children write and speak. In addition to the effect which concepts have on expression of ideas, there are undoubtedly skills in the use of language which modify the effectiveness of expression. The knowledge of pupils' understandings as gained through the mediums of written and oral expression is, therefore, modified to some degree by the skill and the experience of the pupils in expressing themselves through these agencies. This fact emphasizes the importance of good language instruction in the schools. If reliance is to be placed on language as a means of disclosing attitudes and ideas, then teachers of social studies will have to be teachers of language, as they already must be teachers of reading.

No final conclusions regarding the completeness of primary-grade children's understanding of their relations with other persons can be made without more complete data. It is proposed to select a few of the key expressions which in this study were found to be most common and to test three hundred primary children on the extent of their understanding of these generalizations at the various grade levels. Not until this information is secured will the most important conclusions be available.

DIFFICULTY OF THE ARITHMETIC PROCESSES

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EARLIER INVESTIGATIONS

THE relative difficulty of the four fundamental arithmetical processes (addition, subtraction, multiplication, and division) has been the subject of few studies in the field of arithmetic. Holloway,[1] Smith,[2] and Counts[3] made limited studies which paved the way for Clapp's study[4] in 1924.

First, Clapp tested pupils to find out which of the possible number combinations for each of the four processes were most easily remembered or had become automatic. "The combinations were presented to pupils in single form and at a rate which was intended to prevent counting or visualizing or getting the answer in any direct way—the purpose being to determine whether or not the associations were automatic."[5] For Grades IV–VIII the percentages of errors were: addition, 4.1; subtraction, 9.4; multiplication, 6.6; and division, 10.4. Second, he tested pupils' ability to compute the proper answers for various actual examples in addition, subtraction, multiplication, and division. "The combinations were presented in problems, no time limit being imposed—the purpose being to determine the difficulty of the combinations as pupils meet them in the usual

[1] Harry Vance Holloway, *An Experimental Study To Determine the Relative Difficulty of the Elementary Number Combinations in Addition and Multiplication.* Doctor's thesis, University of Pennsylvania, 1914.

[2] James Henry Smith, "Arithmetical Combinations," *Elementary School Journal*, XXI (June, 1921), 762–70.

[3] George S. Counts, *Arithmetic Tests and Studies in the Psychology of Arithmetic.* Supplementary Educational Monographs, Vol. I, No. 4. Chicago: University of Chicago Press, 1917.

[4] Frank L. Clapp, *The Number Combinations: Their Relative Difficulty and the Frequency of Their Appearance in Text-Books.* Bureau of Educational Research Bulletin No. 2. Madison, Wisconsin: University of Wisconsin, 1924.

[5] *Ibid.*, pp. 9–10.

way."[1] For Grades IV–VIII the percentages of errors were: addition, 5.5; subtraction, 3.9; multiplication, 2.5; and division, 6.2.

In 1937 Washburn[2] repeated Clapp's study and obtained essentially the same results. The percentages of error in the tests on memory of combinations were: addition, 7.8; subtraction, 14.2; multiplication, 13.2; and division, 14.8. In the examples test, where the processes were actually performed, the percentages of error were: addition, 6.1; subtraction, 4.6; multiplication, 3.2; and division, 8.2.

TABLE 1

PERCENTAGES OF PUPILS MAKING ERRORS IN ARITHMETIC PROBLEMS WHEN ORDER OF PROCESSES IS REVERSED

Processes	Percentage of Pupils	Processes	Percentage of Pupils
Addition-subtraction	14	Subtraction-addition	30
Addition-multiplication	39	Multiplication-addition	29
Addition-division	33	Division-addition	60
Subtraction-division	49	Division-subtraction	64
Subtraction-multiplication	50	Multiplication-subtraction	32
Multiplication-division	32	Division-multiplication	64

So far there has been no study of the relative difficulty of recognizing the use of arithmetical processes in the solution of arithmetic problems. In other words, no investigator has studied the relative difficulty of the arithmetical processes when they appear in arithmetic problems instead of in pure computation or in arithmetic examples. Berglund-Gray and Young[3] have studied the effect of reversing the order of processes when they are used in the solution of arithmetic problems. They found that reversing the order of two processes definitely affected the difficulty of a problem. The percentage of pupils making errors for each combination is shown in Table 1.

[1] *Ibid.*, p. 10.

[2] S. M. Washburn, "The Relative Difficulty of the Number Combinations in 1937, as Determined by Repeating Clapp's Investigation." Unpublished Doctor's thesis, University of Pittsburgh, 1938.

[3] Gunborg Berglund-Gray and Robert V. Young, "The Effect of Process Sequence on the Interpretation of Two-Step Problems in Arithmetic," *Journal of Educational Research* (forthcoming issue).

PROBLEM AND PROCEDURE

The present study is an attempt to investigate the effect on the difficulty of a process (1) of the position of the process in an arithmetic problem and (2) of the other processes used in a problem. Stated differently: How is the difficulty of an arithmetical process affected (1) by its location as first or second process in the solution of a problem and (2) by which one of the other processes it precedes or follows? For example, is addition more or less difficult when it precedes multiplication or when it follows multiplication? Is addition more or less difficult when it appears with multiplication in the same problem, or with subtraction, or with division?

Any study of the difficulty of arithmetical processes in relation to one another must include all possible combinations. Because three-step problems would have involved too many combinations for one set of tests, this study was limited to two-step problems and the following twelve combinations:

Addition-subtraction	Subtraction-addition
Addition-multiplication	Multiplication-addition
Addition-division	Division-addition
Subtraction-multiplication	Multiplication-subtraction
Subtraction-division	Division-subtraction
Multiplication-division	Division-multiplication

An arithmetic test which contained six problems for each of the twelve combinations was first constructed. That is, six of these problems were solved by first adding and then subtracting; six were solved by first adding and then multiplying; six were solved by first adding and then dividing, and so on. All the problems were equated, as far as possible, by carefully considering those factors which other studies have already found to affect problem difficulty, such as ease of visualization, familiarity of setting, size of numbers, nonessential elements, vocabulary, and sentence form. The problems were designed with sixth-grade difficulty since they were to be administered to fifth-, sixth-, and seventh-grade pupils.

Because of the difficulty of marking actual computation processes and because of the effect that technical errors would have on the factors being studied, it was decided to limit the investigation to the

recognition of solution processes. The following directions, which appeared on the tests, make the procedure clear.

The following problems can be solved by the use of *two* of the arithmetical processes (addition, subtraction, multiplication, division). But you do not need to actually work out the problems. All you need to do is to show which process you would use first and which one you would use next if you were actually going to solve the problems. You are provided with an answer sheet on which you can check in the first line the process you would use first, and in the second line the process you would use second. The two following problems will show what you should do with the rest of them.

"Alice picked 13 quarts of cherries. Her sister picked 6 times as many. How many quarts did both pick together?"

	A	S	M	D
1			×	
2	×			

"John's mother gave him 45 cents to buy bread. He lost 10 cents. How many loaves of bread can he get for the money he has left, if bread costs 7 cents a loaf?"

	A	S	M	D
1		×		
2				×

Because the seventy-two problems were considered too many for one test, they were divided into two tests (Form A and Form B) of thirty-six problems each. These were administered to more than 4,000 pupils, but for various reasons only 3,831 cases were included in the tabulations. Of these, 1,169 were pupils in Grade V; 1,371, in Grade VI; and 1,291, in Grade VII. They were scattered throughout the states of West Virginia, Pennsylvania, Illinois, Minnesota, Montana, and Washington.

An arithmetic placement test was first administered to all pupils studied. The tabulations were then classified (regardless of school grade) into nine ability levels according to the scores made on the placement test.

RESULTS

The location or the position of an arithmetic process in a problem was found to have a definite effect on its difficulty, as is shown in

Table 2. Division and subtraction are more difficult as first processes than they are as second processes, and addition and multiplication are more difficult as second processes than as first processes.

TABLE 2

DIFFICULTY OF EACH ARITHMETICAL PROCESS WHEN PRESENTED AS FIRST OR SECOND PROCESS IN A PROBLEM

PROCESS	FIRST PROCESS		SECOND PROCESS	
	Total Number of Errors Made	Percentage of Pupils Making Errors	Total Number of Errors Made	Percentage of Pupils Making Errors
Addition	5,211	16	8,359	23
Subtraction	9,809	29	7,321	21
Multiplication	7,228	21	14,927	43
Division	15,956	45	9,293	28

TABLE 3

PERCENTAGES OF PUPILS IN NINE ABILITY LEVELS MAKING ERRORS IN CHOICES OF ARITHMETICAL PROCESSES PRESENTED AS FIRST AND SECOND PROCESSES IN PROBLEMS

ABILITY LEVEL	ADDITION		SUBTRACTION		MULTIPLICATION		DIVISION	
	First Process	Second Process	First Process	Second Process	First Process	Second Process	First Process	Second Process
1 (Least able)	35	48	48	36	46	68	69	50
2	32	50	51	42	48	69	65	57
3	28	46	46	32	39	66	64	46
4	23	35	38	28	30	60	56	40
5	17	25	29	20	21	51	49	32
6	12	20	22	14	16	44	43	21
7	8	14	19	10	12	39	36	15
8	6	11	14	6	9	27	29	11
9	3	6	8	4	5	16	22	5

These results were found to be the same at every level of arithmetical ability. All nine levels of arithmetical ability found division most difficult as a first process and multiplication most difficult as a second process. The data in Table 3 show this consistency.

It is likewise obvious that the difficulty of a process is affected by

which of the other processes appears in a problem with it. For example, subtraction is more difficult when it appears with division than when it appears with addition. Table 4 summarizes the difficulty of each process when it is accompanied by each of the other processes in the same problem.

TABLE 4

AVERAGE PERCENTAGE OF PUPILS PER PROBLEM MAKING ERRORS IN EACH ARITHMETICAL PROCESS WHEN PRESENTED IN VARIOUS COMBINATIONS WITH OTHER PROCESSES

Process	Combined with Addition	Combined with Subtraction	Combined with Multiplication	Combined with Division
Addition:				
As first process	.....	8	18	21
As second process	.....	15	14	41
Subtraction:				
As first process	21	.....	35	31
As second process	11	.....	15	36
Multiplication:				
As first process	20	21	.....	21
As second process	35	41	.....	54
Division:				
As first process	45	48	41	.....
As second process	23	37	24	.....

CONCLUSIONS

Some conclusions from this investigation are obvious: (1) The position as first or second process in a problem definitely affects the difficulty of an arithmetical process. The ascending order of difficulty of the processes when used as the first step in the solution is as follows: addition, multiplication, subtraction, division. The order of difficulty of the processes when used as the second step in the solution is as follows: subtraction, addition, division, multiplication. (2) The difficulty of a process depends also on which of the other processes appears in the same problem. However, this factor is so closely related to the first conclusion that its significance is difficult to determine. (3) Essentially the same results were obtained in all grades tested and at all levels of arithmetical ability.

AURAL AND VISUAL COMPREHENSION OF ENGLISH BY SPANISH-SPEAKING CHILDREN

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PROBLEM AND PROCEDURE

A CHILD, when learning to speak his mother-tongue or when "picking up" another language, observes the circumstances under which words or phrases are used, attaches meaning to them, and thereby builds up his understanding of the language. At first his aural vocabulary is far ahead of his oral; that is, he comprehends many more words than he can use. Nobody knows the size of the "comprehending" vocabulary of the child entering school, but his usage vocabulary is estimated to be from two thousand to five thousand words. Teachers of reading recognize that a comprehending and a speaking vocabulary are basic to the acquisition of a visual vocabulary when they insist that reading must not begin until the children have "a relatively wide speaking vocabulary which enables them to recognize quickly the meaning of words and groups of words."[1]

When children enter school with no knowledge, or with a very limited knowledge, of English (as happens in New Mexico, where approximately 50 per cent of the school population is natively Spanish speaking), the language situation becomes of utmost importance. A teacher in charge of beginning pupils of Spanish ancestry must spend much of his time in helping the pupils to understand and to use oral English before he can begin to teach them to read the language. At school the child must repeat the same process of hearing, observing conditions, and attaching meaning to English that he went through earlier at home in learning his mother-tongue, Spanish. For a time his aural English vocabulary will be larger than his

[1] *Report of the National Committee on Reading*, p. 27. Twenty-fourth Yearbook of the National Society for the Study of Education, Part I. Bloomington, Illinois: Public School Publishing Co., 1925.

visual vocabulary. Gradually, as he progresses in his reading, he will encounter many words which he has neither heard nor used, words which are entirely new to him. This same experience comes to the natively English-speaking child earlier or later, depending on the relative simplicity or complexity of the English spoken in his environment. How Spanish children follow this theoretical pattern of change of emphasis from aural to visual seemed a topic worth investigating.

The Durrell-Sullivan Reading Capacity and Achievement Tests consist of a test planned to measure aural comprehension of words and connected prose and of a test designed to measure visual comprehension of the same types of material. Grade and age norms were obtained by testing the same groups of children with both tests. Hence it is possible to determine a child's relative proficiency in understanding spoken and printed English. Durrell and Sullivan believe that they have devised, in these tests of capacity and achievement, an instrument for the detection of those cases of reading difficulty which cannot be explained by low mentality. They point out that capacity of a grade or more in advance of achievement probably indicates reading difficulty. They fail to explain the opposite condition wherein achievement is much in advance of capacity, except by the suggestion of possible hearing difficulty, which calls for investigation with an audiometer.[1] The writers question this assumption.

The Durrell-Sullivan tests were given in Grades V–VIII at the Nambe School to forty-seven natively Spanish-speaking children. These tests, besides measuring present attainment and aiding diagnosis, made possible a comparison of aural and visual comprehension of English by Spanish-speaking children. Moreover, it was thought that this investigation might even shed some light on the so-called "language handicap."

COMPARISON OF TOTAL SCORES

Although some pupils may do better on either capacity or achievement, the expectation would be that in the averages these differences

[1] *Directions for Administering and Scoring the Durrell-Sullivan Reading Capacity and Achievement Tests.* Yonkers-on-Hudson, New York: World Book Co., 1937.

will tend to cancel each other. Consequently, when a reliable difference between means is found, there is reason to believe that the group tested does not represent the population on which these Durrell-Sullivan tests were standardized.

TABLE 1

COMPARISON OF MEAN GRADE EQUIVALENTS MADE BY SPANISH-SPEAKING CHILDREN ON DURRELL-SULLIVAN READING CAPACITY AND ACHIEVEMENT TESTS

TESTS COMPARED	GRADE EQUIVALENT					DIFF. / S.E.$_{diff.}$ FOR ALL GRADES
	Grade V (17 pupils)	Grade VI (4 pupils)	Grade VII (14 pupils)	Grade VIII (12 pupils)	All Grades (47 pupils)	
Total score:*						
Achievement test	3.21	3.80	4.68	4.87	4.12	.....
Capacity test	3.31	3.50	4.03	3.90	3.69	.....
Difference	−0.10	0.30	0.65	0.97	0.43	3.74
Achievement test:						
Word meaning	3.13	3.88	4.78	4.86	4.13	.....
Paragraph meaning	3.31	3.63	4.39	4.75	4.03	.....
Difference	−0.18	0.25	0.39	0.11	0.10	1.11
Capacity test:						
Word meaning	2.79	3.08	3.57	3.65	3.27	.....
Paragraph meaning	3.72	3.78	4.29	3.93	3.95	.....
Difference	−0.93	−0.70	−0.72	−0.28	−0.68	7.56
Word meaning:						
Achievement test	3.13	3.88	4.68	4.86	4.13	.....
Capacity test	2.79	3.08	3.57	3.65	3.27	.....
Difference	0.34	0.80	1.11	1.21	0.86	7.41
Paragraph meaning:						
Achievement test	3.31	3.63	4.39	4.75	4.03	.....
Capacity test	3.72	3.78	4.29	3.93	3.95	.....
Difference	−0.41	−0.15	0.10	0.82	0.08	0.57

* The grade equivalent for a pupil's total score is determined from its place in a distribution of total scores and not from an average of the pupil's grade equivalents in the subtests of word meaning and paragraph meaning.

When the grade equivalents for the total scores of the Spanish-speaking children on the two tests were studied, it was at once apparent that the majority had obtained a higher grade placement on

the test of achievement than on the test of capacity. The first comparison in Table 1 (read horizontally) shows that in Grade V the pupils were approximately equal on the two tests. However, an advance from grade to grade in capacity which was much slower than the advance in achievement resulted in a progressively superior rating on achievement until in Grade VIII the rating on achievement was almost a grade superior to the rating on capacity. Grade-to-grade trends are unreliable evidence because of the few cases in each grade. For the entire group the average superiority in the rating on achievement was 0.43 of a grade. The ratio (3.74) of this difference to its standard error indicates a reliable difference. These Spanish children could read English better than they could understand it when it was spoken. Moreover, the farther they were advanced in school, the greater was the difference in favor of reading. Before an attempt is made to explain this finding, differences within the two tests should be investigated.

ANALYSIS OF TESTS OF ACHIEVEMENT AND CAPACITY

The division of both the achievement and the capacity tests into subtests of word meaning and paragraph meaning makes possible an inquiry of how these pupils compared in knowledge of single words and in handling longer units of speech. The second row of comparisons of Table 1 shows that in achievement the average score on word meaning was somewhat higher than that on paragraph meaning in three of the four grades. For the whole group the difference in favor of word meaning was small and unreliable. The pupils were about equally successful on the two subtests. Increased ability to answer questions on paragraphs read followed closely on increase of visual vocabulary. From the comparison of these means may be inferred a marked overlapping of success factors in these two subtests—an inference which is supported by the correlation between the subtests (.793).

The third comparison of Table 1 shows that on the test of reading capacity all grades did better on paragraph meaning than on word meaning. Because of the greater advance from grade to grade in word meaning, this difference was greatest in the lowest grade and least in the highest. The whole group was superior in paragraph

meaning by 0.68 of a grade, and the ratio (7.56) of the difference to its standard error indicates that the difference was highly reliable. In the case of spoken English, these children comprehended connected discourse much better than they comprehended single words. This finding might be expected since context would give meaning to unfamiliar words. This difference in means and the change in trends of the two subtests indicate that the relation between the subtests of capacity is much less close than that between the subtests of achievement.

COMPARISON OF SIMILAR SUBTESTS IN ACHIEVEMENT AND CAPACITY

The fourth set of comparisons in Table 1 brings together the two similar subtests for comparison of visual and aural vocabulary. All grades did better on the achievement test, and the difference was progressively greater in the higher grades. For the whole group of forty-seven pupils the difference between the two subtests of word meaning was 0.86 of a grade in favor of the achievement subtest. This difference is highly significant. All grades had reached a point at which the visual vocabulary was in advance of the aural. Moreover, the trend shows that they were increasing their visual vocabularies at a more rapid rate than they were increasing their aural vocabularies.

The fifth and last comparison of Table 1 contrasts the similar subtests of paragraph meaning. The capacity subtest was superior in the first two grades, the achievement subtest in the last two. For the whole group the difference between the subtests almost disappeared, being only 0.08 of a grade in favor of the achievement test. The grade-to-grade advance in the achievement subtest was greater and more regular than in the capacity subtest. A graph of the grade placement of these four grades on the two subtests makes a crude slanted $\times$. In the lowest grade the children understood paragraphs which they heard better than paragraphs which they saw; in the intermediate grades they showed little distinction; and in the highest grade they were able to comprehend much more difficult material through the eye than through the ear. This direct reversal of superiority in attainment accompanying different amounts of schooling

points clearly to school experiences, or lack of them, as a potent factor.

INTERPRETATION

It was found that this group of forty-seven Spanish-speaking children understood written English better than they understood spoken English. They comprehended written words and paragraphs about equally well, but they understood spoken paragraphs better than spoken words. The reliable difference in favor of comprehension of written English was chiefly due to the fact that words seen were better comprehended than were words heard. What reasons may be advanced to explain these findings?

The hypothesis suggested by Durrell and Sullivan that poor hearing might have caused the children to do better on the visual test than on the aural was rejected when the correlation between superiority on the visual test and hearing difficulty, as measured by the audiometer, was found to be negligible. The correlation between the percentage of hearing loss and the superiority of the achievement over the capacity test was .075. If physical handicaps do not explain the findings, what of the environment?

These children at Nambe hear and use English only at school. Since at home and in the community they live in a Spanish-speaking world, they are deprived of an important source of language growth —overhearing and entering into the conversation of English-speaking adults. When they have acquired a minimum English vocabulary, they tend to "talk around" a new situation, as did a Nambe child who, while watching the felling of a tree, said, "They throw the tree down." The English of the schoolroom is keyed to the children's capacity for understanding it, for teachers naturally tend to simplify classroom English to the comprehension level of their least able pupils. A formal program with little free discussion but much mechanical repetition permits only minimum opportunity for language acquisition. Unless a program for vocabulary-building and growth in oral language is carefully planned, the children will probably make slow progress in comprehending and in speaking English after they have passed beyond the primary grades. This pattern of growth is revealed by the Durrell-Sullivan test of capacity in the Nambe children's comprehension of English.

Why the better understanding of written English? In the reading situation the child is not in control. He cannot cause a book to rephrase or to simplify its content by his failure to understand it. In consequence he does the best he can and, in spite of many misunderstandings, makes progress in reading. The books that he uses have been selected because of the gradual introduction of new words and increasingly difficult reading material. Thus the child's visual vocabulary soon outgrows his spoken and his aural vocabulary, and each succeeding school year widens the gap. The same factors might be expected to cause superior comprehension of sentences and paragraphs presented visually. Although the group as a whole showed no reliable difference on the achievement and the capacity tests in paragraph meaning, the trend seems to indicate that superiority of the visual paragraph over the aural occurs with the older children. However, the cases are too few to admit pressing this point.

Words from the visual vocabularies of natively English-speaking persons are readily transferred to their aural vocabularies. These subjects are Spanish-speaking children. When new words are met first in print and are not checked by usage or by hearing others use them, various peculiarities of silent pronunciation may easily occur. Perception errors may transpose, change, or omit letters; accents may be misplaced; or vowels may be given the wrong quantity. The characteristic differences between Spanish and English sounds would tend still further to differentiate a Spanish child's idea of a seen word from its accepted pronunciation. It is conceivable that these children might have known many more of the words in the capacity test of word meaning had they seen them in print. That they understood connected discourse much better than they understood single words is plain from the fact that they did reliably better work on paragraph meaning than on word meaning in the aural test (the test of reading capacity).

SUMMARY

Comparison of aural and visual comprehension of English by Spanish-speaking children was attempted at Nambe by giving to forty-seven Spanish-speaking children in Grades V–VIII the Durrell-Sullivan Reading Capacity and Achievement Tests, consisting of an aural test and a visual test. Statistically reliable differences indicate

better visual than aural comprehension. The difference was largely due to superiority in visual vocabulary over aural vocabulary. An apparent superiority in comprehension of visual paragraphs over comprehension of aural paragraphs among the older children could not be proved because of too few cases.

A correlation of only .075 between superiority on the visual test and the percentage of hearing loss ruled out the hypothesis that the difference in the ratings on the two tests resulted from poor hearing. The explanation is advanced that these children suffered a handicap because outside the school they hear and speak little English. The school had failed to overcome this environmental handicap and may even have added to it by not furnishing a program for growth in aural and spoken English comparable to the reading program. More rapid growth in visual vocabulary may have caused discrepancies between the children's ideas of seen words and the accepted pronunciation, which would have still further widened the gap between comprehension of words seen and words heard. This hypothesis was reinforced by the fact that the children's rating on the understanding of paragraphs heard was reliably better than their rating on single words.

SELECTED REFERENCES ON ELEMENTARY-SCHOOL INSTRUCTION

III. The Subject Fields—Continued

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This list of references is the third of the annual series relating to instruction at the elementary-school level. The first list contains items on the curriculum, methods of teaching and study, and supervision. The second list contains items grouped under the following subject fields: reading, English, spelling, handwriting, the social sciences, and geography. The present list covers the remaining subject fields at the elementary-school level and is the last of the series of three dealing with elementary-school instruction.

ARITHMETIC[1]

G. T. Buswell
University of Chicago

The following references were selected from a total of seventy-three articles and books published from July, 1938, to June, 1939. They contained both critical and research materials.

580. Andreen, Earl P. "A Study of Workbooks in Arithmetic," *Journal of Educational Research*, XXXII (October, 1938), 108–22.

An analysis of seventy-three workbooks in arithmetic, followed by an extensive bibliography relating to all phases of workbooks and their use.

581. Brownell, William A., with the assistance of Kenneth G. Kuehner and William C. Rein. *Learning as Reorganization*. Duke University Research Studies in Education, No. 3. Durham, North Carolina: Duke University Press, 1939. Pp. x+88+xx.

An extensive experimental study of borrowing in arithmetic. Data drawn from 590 third-grade pupils from four cities.

582. Brueckner, Leo J. "Deferred Arithmetic," *Mathematics Teacher*, XXXI (October, 1938), 287–92.

A critical discussion of the proposal to postpone the teaching of arithmetic.

[1] See also Item 217 (Grant) in the list of selected references appearing in the April, 1939, number of the *Elementary School Journal* and Items 417 (Breed) and 430 (Morton) in the September, 1939, number of the *Elementary School Journal*.

583. BUCKINGHAM, B. R. "Arithmetic as a Contribution to a Liberal Education," *Elementary School Journal*, XXXIX (April, 1939), 577–83.

A scholarly discussion of possible broader values of arithmetic.

584. BUCKINGHAM, B. R. "Trends and Policies in Arithmetic Curricula," *Mathematics Teacher*, XXXI (November, 1938), 330–35.

A critical review of changes in arithmetic.

585. DICKEY, JOHN W. "Arithmetic and Gestalt Psychology," *Elementary School Journal*, XXXIX (September, 1938), 46–53.

An interpretation of the significance of Gestalt psychology for the teaching of arithmetic.

586. GROSSNICKLE, FOSTER E. "Estimating the Quotient by Two Methods in Division with a Three-Figure Divisor," *Elementary School Journal*, XXXIX (January, 1939), 352–56.

A study of the relative accuracy of the apparent and the increase-by-one methods for estimation of the quotient when the divisor is a three-figure number.

587. GROSSNICKLE, FOSTER E., and SNYDER, JOHN H. "Constancy of Errors to Basic Facts in the Fundamental Operations in Arithmetic," *Journal of Educational Research*, XXXII (January, 1939), 336–44.

A study of sporadic, as contrasted with constant, errors in the four fundamental operations.

588. MORTON, ROBERT LEE. *Teaching Arithmetic in the Elementary School:* Vol. III, Upper Grades. New York: Silver Burdett Co., 1939. Pp. x+470.

The third volume of the author's series on the teaching of arithmetic.

589. SMITH, HENRY LESTER, and EATON, MERRILL THOMAS. *Two Studies in Arithmetic.* Bulletin of the School of Education, Indiana University, Vol. XV, No. 2. Bloomington, Indiana: Bureau of Co-operative Research, School of Education, Indiana University, 1939. Pp. 92.

The first investigation, "A Diagnostic Study of Efficiency in Arithmetic," is an elaborate study of the mastery of number combinations when a mechanical device is used for exposing the numbers. The method supplements initial "group diagnosis" by individual diagnoses and case studies. Complete data are given. The second study, "Teaching the Number Facts of Addition," investigates the changes in efficiency in problem-solving ability resulting from drill on the addition combinations. The subjects were twenty-three college students.

590. *Studies in Arithmetic*, Vol. I. Publications of the Scottish Council for Research in Education, XIII. London: University of London Press, Ltd., 1939. Pp. xx+144.

A monograph containing five studies prepared by members of a subcommittee of the Scottish Council for Research in Education. The studies deal with (1)

time allocation in the primary grades, (2) a questionnaire study of arithmetical teaching practices, (3) difficulty of basic number facts, (4) adding upward or downward, and (5) a factorial analysis of arithmetic tests.

591. WASHBURNE, CARLETON. "A Reply to Brownell's Critique of the Committee of Seven Experiments," *Elementary School Journal*, XXXIX (February, 1939), 417–30.

A critical discussion of the problem of grade placement in arithmetic.

592. WASHBURNE, CARLETON. "The Teaching of Linear Measure, Square Measure, and Time," *Elementary School Journal*, XXXIX (March, 1939), 509–23.

An attempt to determine the mental-age level at which pupils may understand certain topics in arithmetic.

593. WILSON, GUY M. "What Theory of Arithmetic?" *Educational Administration and Supervision*, XXV (February, 1939), 93–97.

A critical evaluation of various theories relating to arithmetic.

SCIENCE

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This bibliography on science in the elementary school includes articles, brochures, research studies, and books published during the interval of June, 1938, to June, 1939. In comparison with the three previous intervals, 1935–38, this period presents a much larger number of items from which to choose a list of selected references.

The reviewer notes that there are many new names among the authors—an unmistakable sign of increased interest in science in the elementary school. All the materials considered give the impression that science is being taught along progressive lines. Emphasis is placed on experimentation and observation—the true method of science. The reviewer is unable, however, to report similar improvement in content, except in a few cases. Much of the content of science in the elementary school needs critical evaluation if science is to meet with the purposes of education in a society undergoing rapid mutation. For example, neither the rich area of conservation nor the areas of health and consumer education have been probed deeply.

594. BLOUGH, GLENN O. "New Books for Your Science Library," *Science Education*, XXIII (January, 1939), 34–37.

A well-selected list of supplementary books published during 1937–38 for teachers and children.

595. BLOUGH, HELEN DOLMAN. "Methods of Teaching Science to Children," *Science Education*, XXIII (January, 1939), 11–17.

This practical and helpful article describes a method of teaching science in which the pupils' interests and needs have been taken into account.

596. BRINDZE, RUTH. *Johnny Get Your Money's Worth (and Jane, Too!)*. New York: Vanguard Press, Inc., 1938. Pp. x+230.

This delightful book is the first attempt that this reviewer has seen to bring consumer education within the range of children of the upper elementary school. The author's long association with reputable consumer-education organizations gives the book authenticity. Completely divorced from the stodginess of some children's books, the discussions consider one after another of the real everyday problems of boys and girls. The book deals with balls, bats, baseball gloves, candy, cereals that contain "more energy than any other," and the saving of coupons to win a "bike." It goes into the problem of radio advertising designed for children and exposes the fact that giving badges and secret codes—for a dime and three coupons—is a highly profitable business. Includes many simple experiments designed to test the quality of articles purchased by children.

597. BRUCE, GUY V. The Children's Play-at-Science Series: Book I, *World of Air and Water*, pp. 96; Book II, *Heat, Fire, and Fuels*, pp. 76. Newark, New Jersey: New Jersey State Teachers College Bookstore, 1938.

The first two in a proposed series of books of experiments suitable for use in elementary schools. Usually the experiments require materials easily found in most school and home environments.

598. CROXTON, W. C. "What Can the Elementary School Contribute in a Continuous Science Program?" *Science Education*, XXIII (January, 1939), 5–9.

A well-thought-out discussion of the place of elementary science in the entire school program. The author shows that the science curriculums of the secondary school must take into account children's growth in science concepts resulting from elementary-school experiences. Every teacher who conceives of his work as an integral part of the twelve-year program will be interested in this article.

599. FAHY, MILDRED. "Some Effective Science Activities in the Upper Elementary Grades," *School Science and Mathematics*, XXXIX (May, 1939), 450–54.

Many experiments and activities are suggested in this article. The reviewer wishes that space had permitted a detailed description of each.

600. HAUPT, G. W. "A Neglected Factor in the Teaching of Elementary Science," *Science Education*, XXIII (January, 1939), 31–34.

A discussion of the place of children's hypotheses in learning, specifically applied to instruction in science.

601. JOHNSON, GAYLORD. *The Story of Earthquakes and Volcanoes.* New York: Julian Messner, Inc., 1938. Pp. x+144.
An excellent book dealing with earthquakes and volcanoes in a simple, interesting manner. Can be read by better readers in Grades V and VI.

602. KLAUSSEN, DORIS DAVIS. "Experiences in a Study of Soil," *Science Education*, XXII (November, 1938), 300–301.
An account of an experimental study of soils made by a second grade in the Kellogg School, Battle Creek, Michigan.

603. NOLL, VICTOR H. *The Teaching of Science in Elementary and Secondary Schools.* New York: Longmans, Green & Co., 1939. Pp. viii+238.
Deals with the teaching of science at the elementary- and secondary-school levels. Although written for use primarily in teacher-education classes, this book will prove a worthy addition to the teacher's or the school's library. Makes use of many of the more important research studies in science education.

604. PHIPPS, DOROTHY V. "Adding Interest to the Elementary Science Classroom," *School Science and Mathematics*, XXXIX (March, 1939), 210–18.
Gives many excellent suggestions on how to grow plants in the classroom; how to construct a sand table for experiments; and how to build aquariums, terrariums, and vivariums.

605. PLEITZ, JANET, and SHONTZ, GERALDINE. "Providing First Grade Science Experiences from Community Resources," *Teachers College Journal*, X (January, 1939), 51–52. Terre Haute, Indiana: Indiana State Teachers College.
Includes many helpful suggestions on how to use community resources in science for young children.

606. "Providing Significant Experiences in Science," *Childhood Education*, XV (April, 1939), 339–69.
This issue of *Childhood Education* has been given over to science. Each of the articles contributes to the central theme. Teachers will secure many valuable practical suggestions from the six articles dealing with as many aspects of science in the elementary school.

607. RALYA, LYNN L., and RALYA, LILLIAN L. "Some Misconceptions in Science Held by Prospective Elementary Teachers," *Science Education*, XXII (October, 1938), 244–51.
Reports the results of a test given to 130 teachers expecting to teach in a state requiring science at the elementary-school level. A significant percentage of these prospective teachers exhibited ignorance or misconception of many simple and basic facts and principles, knowledge and understanding of which would be necessary for adequate presentation of elementary-school science.

608. RUSSELL, DAVID W. "Suggestions for the Care of Pets in the Elementary School Classroom," *School Science and Mathematics*, XXXIX (April, 1939), 354–68.
An outline on the care of insects, birds, snakes, amphibians, mammals, etc., in the classroom.

609. *Science in General Education.* Report of the Committee on the Function of Science in General Education. Commission on Secondary School Curriculum. Progressive Education Association Publications. New York: D. Appleton–Century Co., Inc., 1938. Pp. xiv+592.

The most searching report dealing with science-teaching since the publication in 1932 of *A Program for Teaching Science* (Thirty-first Yearbook of the National Society for the Study of Education, Part I). Although the report deals primarily with science in the secondary school, certain parts of it have value for workers in the elementary school. The report departs from traditional procedures in dealing with the impact of science on the adolescent and the world in which he lives. Persons concerned with curriculum revision will especially value the method of approach to the problems that underlie a functional type of science.

610. *Science Program for the Elementary Grades.* Bulletin No. 375. Baton Rouge, Louisiana: State Department of Education, 1938. Pp. 58.

The course of study in science for the elementary schools of Louisiana.

611. SHARPE, PHILIP B. "The Twelve-Year Science Sequence," *School Science and Mathematics*, XXXIX (April, 1939), 320–23.

An interesting discussion of some of the educational values of science, with particular emphasis on the elementary school. The author questions the value of a twelve-year science program without special training for teachers in the elementary schools.

612. SHOEMAKER, LOIS M., and SHOEMAKER, MORRIS B. *The Conservation of Trees and Forests.* Trenton, New Jersey: State Department of Public Instruction, 1938. Pp. 16.

A manual, prepared for use in the seventh annual New Jersey Conservation Week, which will be found useful by teachers in other states.

613. WATROUS, J. "Atmosphere: Material for a Unit in Elementary Science," *Grade Teacher*, LVI (December, 1938), 46.

A suggested outline for a unit on air.

614. WEST, JOE YOUNG. "A Technique for Appraising Certain Observable Behavior of Children in Science in the Elementary Schools," *Science Education*, XXII (October, 1938), 234–41.

Describes a controlled-observation technique of appraising reactions of children in science. This study should prove of use to supervisors, administrators, and teachers who are interested in measuring attitudes, motives, opinions, degree of participation in class work, responsibility of the child for doing his share of the class work, and other similar types of behavior.

615. WEST, JOE YOUNG. "Some Necessary Considerations in Constructing a Curriculum in Science for the Elementary School," *Science Education*, XXIII (January, 1939), 22–27.

A consideration of several approaches to the problems underlying the construction of the science curriculum in the elementary school.

616. WYLER, ROSE. "Radio: An Elementary Science Teaching Tool," *Teachers College Record*, XL (December, 1938), 222–28.

Describes the present status of radio in science-teaching. The author's wide experience in writing radio programs in science for children makes this article interesting and authoritative.

MUSIC

ANNE E. PIERCE
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617. COLEMAN, SATIS N. *Your Child's Music*. New York: John Day Co., 1939. Pp. 180.

This book expresses modern ideas of education. It will be useful to elementary- and secondary-school teachers as well as parents, for its philosophy is based on practical experience and experiments by the author. Among the topics discussed are the child's need of music, musical talent, creative experiences, emotional health of the child, memory associations, note-reading experiences, the problem of practice, and the child voice.

618. DYKEMA, PETER W., and CUNDIFF, HANNAH M. *New School Music Handbook*. Boston: C. C. Birchard & Co., 1939. Pp. xiv+382.

A revision of the book *School Music Handbook* published in 1923. Material has been expanded and brought up to date. Chapters treat of music at both elementary- and secondary-school levels. A reference book for student and teacher.

619. EAGLER, GRANVILLE. "Our American Music," *Journal of the National Education Association*, XXVII (November, 1938), 232–34.

Describes the plan of teaching American music in the Carrollton (Ohio) public schools. Lists of materials and practical suggestions for using them are included.

620. *Education*, LIX (May, 1939), 521–62.

The entire number is devoted to music education. Titles of articles are descriptive of contents and include the following: "Music Education Comes of Age" by Lenel Shuck, "The Teacher of Music" by Harry R. Wilson, "The Place and Use of Music Tests" by Raleigh M. Drake, "Tonal Learning: The Basic Factor in Musical Growth" by Marion Flagg, and "Intelligence and Musicality" by James L. Mursell.

621. FLUECKIGER, SAMUEL L. "Some Trends in Music Education," *Music Educators Journal*, XXV (March, 1939), 18–19, 81, 83.

The writer gives his viewpoint as well as the viewpoints of other educators regarding such problems as music-reading, integration or fusion, and training of teachers. Some attention is given recent literature and its implications.

622. KINSCELLA, HAZEL GERTRUDE, and TIERNEY, ELIZABETH M. *Music in the Small School*. Lincoln, Nebraska: Teachers College and the University Extension Division of the University of Nebraska, 1939. Pp. viii+176.

A manual written to help the teacher in the small urban system as well as in the rural school. Definite materials and methods are given for vocal, instrumental, and appreciational phases of music instruction in the grades and in high school.

623. *Music Education in the Elementary School.* Sacramento, California: State Department of Education, 1939. Pp. xvi+152.

A book compiled by many experts to help teachers in the elementary schools of California. Various phases of music instruction are treated, such as the child voice, singing procedures, time allotment for the music period, seating of the class for the music lesson, equipment for the vocal program, listening to music, music as an integrative experience in the major learnings, the development of music appreciation, creative expression in music, instrumental music, and rural-school music. Definite materials and an outline of work for each grade are given.

624. RAFFERTY, SADIE. *Music Appreciation.* New York: Silver Burdett Co., 1939. Pp. 30.

Gives reasons for teaching music appreciation and discusses methods of presentation of materials and the various fields of experience involved.

625. TINDALL, GLENN M. "New Musical Reference Books," *School and Society*, XLIX (June 10, 1939), 742–44.

Contains brief reviews of recently published books that are useful in the teaching of school music.

626. WECKER, KARL. "Music for Totally Deaf Children," *Music Educators Journal*, XXV (May, 1939), 45, 47.

A report of an experiment with twelve children. It was found that rhythm can be taught effectively in all stages of deafness. Although pitch is more difficult, satisfactory results were obtained with some of the group.

627. WHEELWRIGHT, LORIN F. *An Experimental Study of the Perceptibility and Spacing of Music Symbols.* Teachers College Contributions to Education, No. 775. New York: Teachers College, Columbia University, 1939. Pp. xiv+116+test.

A study concerned with the effects of size of print and spacing of symbols on music-reading. Experiments were limited to a small group, and the findings, according to the investigator, are not conclusive. Although he points out limitations of the experiment, he says results indicate that a new process of printing is advisable to make the score easier to read.

ART

W. G. WHITFORD
University of Chicago

628. ALLEN, ARTHUR B. *The Teaching of Art to Infants and Junior Children.* London: Frederick Warne & Co., Ltd., 1937. Pp. xii+114.

A companion volume to *The Teaching of Art in Senior Schools* by the same author. Discusses the art program for pupils from five to ten years of age as

practiced in the schools of England. Free expression, drawing, painting, design, and color are the chief topics treated.

629. *Art Education Today.* Sponsored by Members of the Fine Arts Staff of Teachers College, Columbia University. New York: Teachers College, Columbia University, 1939. Pp. 94.

Fifth issue of the annual publication originally dedicated to the memory of Arthur Wesley Dow. "Contrary to the plans of past issues in which a variety of subjects relating to art were touched upon, this number is devoted specifically to instruction at different levels, from the elementary grades through the vocational school and teachers' college."

630. *Creative Expression.* Edited for the Progressive Education Association by Gertrude Hartman and Ann Shumaker. Milwaukee, Wisconsin: E. M. Hale & Co., 1939 (second edition). Pp. 350.

A reprint of an earlier publication with no important revisions. Presents a stimulating body of experimental data pertaining to the creative-expression movement of modern education.

631. DEUCHER, SYBIL, and WHEELER, OPAL. *Giotto Tended the Sheep.* New York: E. P. Dutton & Co., Inc., 1938. Pp. 96.

A fascinating tale of the boyhood life and later career of the famous artist Giotto di Bondone.

632. ELLIS, CLIFFORD and ROSEMARY. *Modeling for Amateurs.* "How To Do It" Series, No. 20. New York: Studio Publications, Inc. Pp. 78.

Presents simple methods of modeling a great variety of objects from clay and paper. Discusses tools and materials, wall decorations, the head and human figures, animals, toys, puppets, and masks. Excellent illustrations of objects and processes.

633. GRAVES, MAITLAND. "What Is Your IQ in Design?" *Art Instruction,* III (April, 1939), 11–14.

Presents a series of twenty tests devised to measure discriminating judgment in arrangement of abstract visual elements. Artists taking the test attain a score of 94 per cent; the laymen's score is much lower. The average score is placed at 82.5 per cent.

634. GRAVES, MAITLAND. "Analysis of the Graves Visual Design Test," *Art Instruction,* III (May, 1939), 23–25.

Explains the basis for judging the twenty charts comprising the Visual Design Test mentioned in Item 633. Why each of the twenty test items is better than another is explained.

635. LUCIO, WILLIAM H., and MEAD, CYRUS D. "An Investigation of Children's Preferences for Modern Pictures," *Elementary School Journal,* XXXIX (May, 1939), 678–89.

Presents some interesting conclusions pertaining to the selection and the use of pictures in the elementary-school program. The pictures comprised color prints of the original works of well-known painters.

636. PERRY, RAYMOND W. *Block Printing Craft.* Peoria, Illinois: Manual Arts Press, 1938. Pp. 144.

An excellently illustrated book providing all necessary details and instructions for making block prints. It furnishes a source of functional knowledge of utmost value in developing creative work and a rich appreciation of all printing arts. The material is suited to the programs of elementary and secondary schools.

637. PIERCE, ABBIE LOUISE. "A Pageant of Art through the Ages," *School Arts Magazine,*" XXXVIII (February, 1939), 204–5.

A brief discussion of a school-activity program integrating the work of art, music, dramatics, industrial arts, and home-economics departments.

638. POOLE, LYNN D. "Art Plus History," *School Arts Magazine,* XXXVIII (February, 1939), 184–86.

Discusses briefly a plan for the integrated study, through dramatization, of the art, music, dancing, literature, history, customs, and daily life of the American Indian.

639. WINSLOW, LEON LOYAL. *The Integrated School Art Program.* New York: McGraw-Hill Book Co., Inc., 1939. Pp. xiv+392.

Presents an approach to art as an outgrowth of the curriculum as a whole for the lower grades and the high school. Outlines a variety of school experiences in which balance is obtained between general and technical information and between directed and creative activities.

INDUSTRIAL ARTS[1]

HOMER J. SMITH
University of Minnesota

640. CLAUDE, JOHN. "Progress of School Shops 1924–1938," *Industrial Arts and Vocational Education,* XXVIII (January, 1939), 8–10.

A brief and interesting report on the development of school shops in the United States. Eight figures afford the facts of annual increase of such shops by total numbers, by subjects, by regions, by states, and by types of schools.

641. GRONEMAN, CHRIS H. "'1001' Inexpensive Teaching Materials for Industrial Education." Commerce, Texas: Chris H. Groneman (East Texas State Teachers College), 1938. Pp. 23 (mimeographed).

Lists free or inexpensive bulletins useful to industrial teachers under the following classifications: automobile mechanics, crafts, drawing, electricity, industry, metal-work, woodwork, and wood-finishing. The manufacturing and distributing firms are named.

642. GROPIUS, WALTER. "Education toward Creative Design," *Industrial Education Magazine,* XL (November, 1938), 241–48.

Principles and methods promulgated by the famous *Bauhaus* ("world's most discussed school of architectural design") are here presented. A comprehensive

[1] See also Item 529 (Russell and Associates) in the list of selected references appearing in the October, 1939, number of the *School Review.*

explanation of the theory and plan, with implications for American education, particularly for the fine arts and industrial arts.

643. HINDERMAN, R. A. "Industrial Arts and Industrial Society," *Industrial Arts and Vocational Education*, XXVIII (April, 1939), 140–42. (Condensed in *American Vocational Association Journal and News Bulletin*, XIV [May, 1939], 105–8.)

A brief, interesting discussion of the fact that youth of today are somewhat insulated from the specific activities of adults in their communities. Suggestions are made on how, through industrial-arts courses, pupils may become better informed about, and more interested in, the occupations and civic responsibilities that await them. The author believes that the community should become a laboratory of the school and offers suggested practice to this end.

644. HUNTINGTON, H. A. "Integration and Industrial Education," *Industrial Education Magazine*, XLI (January, 1939), 12–22.

A discussion of the purposes and the bases of integration as a curriculum and course-of-study concept or type. Particular reference is made to industrial education, and many valuable suggestions are given for teachers and administrators.

645. *Industrial Arts Program in Junior and Senior High Schools of Texas.* Bulletin No. 389. Austin, Texas: State Department of Education, 1938. Pp. 126.

Industrial arts is presented under three classifications or levels: "Laboratory of Industries," "General Industrial Courses," and "Special Craft Courses." There are suggestions of offerings, units of instruction, methods and management, pupil organization, etc. Helps on the making of industrial tests and individual instruction sheets are well presented for the use of teachers.

646. "Instructional Aids in Industrial Arts." Bulletin No. 100-G5. Indianapolis, Indiana: State Department of Public Instruction, 1939. Pp. 164 (mimeographed).

The most comprehensive, recent syllabus on industrial arts. Prepared as a committee project to assist teachers of a state in improving instruction. The common industrial courses of the junior and senior high school years are included, discussion being given to the objectives, the units of work, the projects, and the activities. References for each subject are featured.

647. KANSAS STATE TEACHERS COLLEGE FACULTY. *The Educational Leader* (Industrial and Vocational Education and Art Number), II (January, 1939), 53–96. Pittsburg, Kansas: Kansas State Teachers College.

This special issue of a college journal contains brief articles entitled: "Educational Significance of Industrial Arts," "Arts in Our Schools Today," "Influence of Industrial Arts on Good Taste," "Why Not Crafts?" "Aims and Functions of the General Shop," and "Industrial Arts and Leisure."

648. MERTES, RAY O., and NOBLE, L. HENRY. "Personality Guidance and the School Shop," *Industrial Arts and Vocational Education*, XXVIII (June, 1939), 221–24.

The authors urge that the intangible elements of instruction be given more attention and base the statement on a survey made in sixty-two industries of Beloit, Wisconsin, a city with a population of twenty-five thousand. A random sampling is given of employers' responses to questions concerning high-school subjects as preparation for work, their techniques of selecting young employees, the types of beginners likely to succeed with them, etc.

649. MYERS, GEORGE E. "What Lies Ahead in Industrial Education?" *Phi Delta Kappan*, XXI (February, 1939), 249–54. (Also in *Industrial Education Magazine*, XLI [May, 1939], 118–25.)

Reviews the changing personnel of the schools and the disturbed status of youth and their parents in the pattern of the world's work. Discussion proceeds upon three related topics: preparation in advance of employment, preparation in connection with employment, and preparation for change of employment.

650. *Safety Education in Industrial School Shops*. Bulletin 332. Harrisburg, Pennsylvania: State Department of Public Instruction, 1938. Pp. 88.

Reports a one-year, one-state survey of accidents in school shops. A list of specific recommendations is furnished for safety advance, in general and by types of school shops. A bibliography is appended.

651. "School Shop Annual," *Industrial Arts and Vocational Education*, XXVIII (March, 1939), 87–136 and 1A–82A.

This twelfth edition of Bruce's "School Shop Annual" contains six articles on "School-Shop Budgeting," seven on space and layouts of "School Shops," eight on "Shop Courses," two on "Shop Safety," and five of miscellaneous nature. Equipment and supply lists are shown in woodwork, metal-work, automotive shop, printshop, drafting, and electricity. A large amount of advertising of shop and related materials is provided.

652. SELVIDGE, ROBERT WASHINGTON. "A Professional Inventory," *Industrial Education Magazine*, XLI (May, 1939), 133–34.

Twenty-four items are offered by means of which a teacher may make a self-survey of his professional fitness for industrial-education service. The list offers administrators a device for evaluating or comparing their industrial instructors.

653. STRUCK, F. THEODORE. "A Few Aspects of a Philosophy of Industrial Arts," *Industrial Education Magazine*, XLI (May, 1939), 129–32.

This brief, excellent statement concerns ideals, values, and goals and is suggestive of types of instruction, methods of procedure, and standards.

HOME ECONOMICS[1]

BEULAH I. COON
United States Office of Education

654. ALBRIGHT, NORMA. "A Study of Values Carried Over in Home Economics," *Journal of Home Economics*, XXXI (May, 1939), 296–99.

Parents of girls who had had at least one year's work in Grades VIII–XI listed, as their opinions of the values of the home-economics program, the acquisition of household skills, understanding of family problems, appreciations, cooperation in the home, and broadened interests.

655. BABCOCK, GLADYS. "Supervising the Student-Teacher's Development of a Family Relationship Unit on the Seventh-Grade Level," *Educational Administration and Supervision*, XXV (March, 1939), 191–98.

An effort was made to find the problems and the interests in family relations of seventh-grade girls. The resulting unit developed with them included friendships, hospitality, family fun, management of time and money, arrangement of room space, and causes of tension at home.

656. BACHE, ELIZABETH D. "Contribution of Home Economics to the Development of Effective Citizenship in the Elementary School," *Journal of Home Economics*, XXX (December, 1938), 692–95.

In the elementary school the home-economics teacher can assist with the task of understanding the homes from which pupils come and of so adapting programs that better and happier personal and social living for the pupils is possible and that honesty, thrift, international understanding, and health become vital forces shaping the pupils' lives.

657. BERGE, EDNA VON. "Tips on Teaching Child Care in 7th and 8th Grades," *Practical Home Economics*, XVII (January, 1939), 10–11.

Describes how the closeness to "doll days," offering a fertile soil for work in child care in these grades, made it possible to help pupils get greater enjoyment from children as individuals and learn through experiences to build up right relationships with them.

658. CHOPE, H. D. "The Home Economist in the Community Health Program," *Journal of Home Economics*, XXXI (May, 1939), 289–95.

Describes means by which a home-economics program may promote health and ways in which health officers and home-economics teachers have worked together in a community.

659. HERRINGTON, EVELYN M. "Integrating Home Economics," *Practical Home Economics*, XVI (May, 1938), 193–94, 218, 220, 222.

[1] See also Item 253 (Nyswander) in the list of selected references appearing in the March, 1939, number of the *School Review* and Item 242 (Martens) in the May, 1939, number of the *Elementary School Journal*. Chapters xi and xii in Item 340 (McKown) in the April, 1939, number of the *School Review* include many specific suggestions for developing in elementary-school pupils attitudes which will make for satisfactory personal, home, and social living.

The procedures used in correlating the home-economics program with school and community activities, the provision of an efficient workshop, and the organization of classes used by one teacher are described, together with an evaluation of the results found with pupils in Grades VII–IX in several types of schools.

660. "Homemaking for Grades 7 and/or 8," *Teacher's Guide for Instruction in Homemaking, Grades 7 to 12*, pp. 1–11. Home Economics Bulletin, No. 11. Oklahoma City, Oklahoma: Division of Vocational Education, State Department of Education, 1939.

For seventh- and eighth-grade pupils the outline suggests consideration of the girl's part in the home, wise spending and sane saving, helping with family meals, looking one's best, and care of young children. Four years' work in homemaking in high school is outlined, and suggestions are offered for homemaking for boys.

661. JOHNSON, WILLIAM H. "New Opportunities for 'Slow Learners,'" *Chicago Schools Journal*, XX (March–April, 1939), 153–56.

Seventeen elementary schools in Chicago have set up vocational centers for slow-learning pupils, where the work is centered in jobs that can be done in the home and community. Self-confidence is built, skills are developed, and consumer appreciation results from the concrete problems solved.

662. MCCORMICK, MARY G. "The Educational Possibilities of the School Lunch," *Journal of Home Economics*, XXXI (April, 1939), 226–28.

A cafeteria director familiar with modern educational philosophy as well as dietetics and cafeteria management may co-ordinate health-teaching in the school and enable pupils to learn to do by doing.

663. MALLORY, BERENICE. "A Proposed Plan for a Core Course in the Secondary School," *Journal of Home Economics*, XXXI (February, 1939), 81–85.

Criteria for the selection of units for core programs in junior and senior high school are set up, and units which meet these criteria are described.

664. MILNER, ELOYSE SARGENT. "Health Program Centers on Food," *Nation's Schools*, XXIII (February, 1939), 68–70.

One school system describes how the cafeteria manager and the elementary-school teachers co-operate in trying to improve food and health practices of pupils.

665. REED, SOPHIA. "Home Economics in General Education," *Educational News Bulletin*, IX (April, 1939), 89–90. Kalamazoo, Michigan: Western State Teachers College.

Home-economics courses made available for all prospective teachers at Western State Teachers College include consumer buying, marriage and family relationships, nutrition, food for the family, clothes and personality, child development, home nursing and family health, and the house.

666. WOODS, ELIZABETH L. "Guiding Exceptional Children," *California Journal of Elementary Education*, VII (February, 1939), 149–56.

Many ways are described by which a teacher, recognizing the home situations from which migrant children come, can help overcome feelings of fear, insecurity, and tendencies to ill-health by giving pupils experience with problems of clothing, shelter, food, and community life so as to develop security and joy in successful accomplishment.

LIBRARY TRAINING[1]

EVANGELINE COLBURN
University of Chicago

667. ALEXANDER, CARTER. "Co-operation in Teaching Elementary-School Pupils To Use Library Materials," *Elementary School Journal*, XXXIX (February, 1939), 452–59.

Discusses ways in which teachers, librarians, and homes may co-operate in training children to make effective use of library materials.

668. DICKINSON, C. W., JR. "What Is Adequate School Library Service?" *Wilson Bulletin for Librarians*, XIII (October, 1938), 91–96.

A lengthy discussion of general value to principals and librarians. One section outlines what the pupil has a right to expect of the school library.

669. FENNER, PHYLLIS R. "The Librarian in the School," *Library Journal*, LXIII (September 15, 1938), 671–73.

Describes activities entered into by children which provide experience in various aspects of library training.

670. FINCH, CHARLES EDGAR. "Building Better Study Habits," *Journal of Education*, CXXII (February, 1939), 59–60.

Includes tests on using textbooks and reference books.

671. REGER, ANNA. "The Function of the Elementary School Library in Directing Study," *Educational Method*, XVII (May, 1938), 391–94.

A concise and comprehensive article showing how the library contributes toward realizing the important objectives of education.

672. STAATS, PAULINE G. "Simple Organization for an Elementary School Library," *Instructor*, XLVIII (November, 1938), 11, 71–73.

Gives carefully outlined directions for organization and use of school libraries. Activities and training for children in the library are listed under "Pupil Participation."

[1] Item 501 (*Newer Practices in Reading in the Elementary School*) in the list of selected references appearing in the October, 1939, number of the *Elementary School Journal* contains three articles that are of importance in library training: Bernice Mundy and Evelyn R. Girardin, "The Use of Libraries by Children," pp. 505–11; Frances Pethick Nelson, "The Library in a Village School," pp. 496–504; and E. P. O'Reilly, "Providing Library Facilities in the School," pp. 487–95.

HEALTH AND PHYSICAL EDUCATION

D. K. BRACE
University of Texas

673. EKDAHL, GEORGE C. "A Study of the Most Popular Games of Low Organization—Grades I–VI," *Research Quarterly of the American Association for Health, Physical Education, and Recreation*, X (March, 1939), 120–23.

A report of a comprehensive survey of children's preferences in simple games. The ten games best liked by children in each grade are named.

674. HESELTINE, MARJORIE M. "The Contributions of Public Health Nutrition to School Child Health," *Journal of Health and Physical Education*, X (March, 1939), 142–43, 196–97.

An interesting discussion of nutrition activities of public-health agencies in the program for the health of the school child.

675. HINMAN, STRONG. *Physical Education in the Elementary Grades*. New York: Prentice-Hall, Inc., 1939. Pp. viii+524.

Organization and subject matter arranged in progression for modern elementary schools. Valuable for the regular classroom teacher.

676. *On a Rainy Day*. Prepared for the National Recreation Association by Dorothy Canfield Fisher and Sarah Fisher Scott. New York: A. S. Barnes & Co., 1938.

Written to help children originate games and play activities.

677. OWENS, FLORENCE. "Planning an Elementary School Playday," *Journal of Health and Physical Education*, X (May, 1939), 281, 310–11.

Describes a complete program for a noncompetitive playday.

678. RATH, EMIL. "Grade Placement of Folk Dances," *Research Quarterly of the American Association for Health, Physical Education, and Recreation*, X (March, 1939), 51–56.

Grade placement of folk dances for Grades III–VII, based on opinions of teachers.

679. RICHARDSON, BEATRICE E. "Dance—and the Child," *Journal of Health and Physical Education*, X (June, 1939), 328–31.

Suggests methods of teaching the dance to children in elementary school and in junior high school.

Educational Writings

*

REVIEWS AND BOOK NOTES

COMMUNITY BACKGROUND AND EDUCATION.—Birth-rates and other aspects of population change have attracted international attention in the economic and the political circles of the Occident during the past decade. In America domestic problems emerging from related sources have been studied by private and public research groups and have been debated by local and national legislative bodies. In keeping with this general interest is a study[1] of demographic, social, and educational problems in the most populous and wealthy state of the Union, New York, which aims "to throw light on the relationship between the cost and character of education in the various communities" of the state "and to portray the demographic and socio-economic background of these communities" (p. 1).

As part of a larger study, the present volume considers fifteen major questions, relating to such matters as trends in general population and school enrolment, migration, ethnic groups, changes at particular school levels, public health, employment opportunities, capacity and effort to support schools, variations among communities, and to the interrelations among these matters as shown in New York City and in up-state New York. After a preliminary chapter describing the method of selecting communities for intensive study, three chapters (of 156 pages) are devoted to population problems, two short chapters (of 53 pages) to social and economic factors, and the remainder to "Neighborhoods of New York City" and to community backgrounds and education in the state generally. Specific sources of data and definitions of the indices of analyses used are given in appendixes. The findings are presented in thirty-one tables, much additional tabular material, forty-five maps, and fourteen charts. Summaries help the reader retain the gist of the findings.

Trends in New York State are similar to those elsewhere in America in many respects, for example, general population change, health, school enrolment, broadening educational opportunity, and variation in effort and capacity to support schools. Yet many problems are intensified through extremes in concentration of population or of wealth, racial and ethnic variation, non-citizenship, and occupational variation and shifts. Moreover, such items as the Regents' examinations introduce problems not usually found elsewhere.

[1] Julius B. Maller, *School and Community: A Study of the Demographic and Economic Background of Education in the State of New York.* The Regents' Inquiry into the Character and Cost of Public Education in the State of New York. New York: McGraw-Hill Book Co., Inc., 1938. Pp. xiv+360. $3.50.

The author has assembled an abundance of data relating to demographic, economic, and educational indices used in his community analyses, has presented the data in readily understandable form, has shown many interrelations among the different indices used, and has pointed out several implications of his findings for future developments. Some readers, however, might anticipate more attention to implications than the author gives. Thus at numerous points interesting data are presented, but the bearing of the evidence on educational problems is left hazy or is not suggested, for example, the data on ethnic composition of the population, fatal-accident rates, numbers of telephones and radios, and suicide and homicide rates. Some of the author's conclusions may be questioned: that colleges will reach their maximum enrolments about 1943; that sex distribution among professions will continue to be the same as it is now; that future economic changes are likely to decrease high-school enrolment, presumably through the employment of youth under eighteen years of age.

Although the study may have shortcomings, the abundance of evidence on the wide variety of related indices of community status used in analyzing some of America's socially complex communities, as well as the clear presentation of essential findings, should make the volume decidedly worth the attention of anyone—administrator, teacher, or fieldworker—interested in problems clustering about the field of education, sociology, and public welfare.

HAROLD H. PUNKE

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FUNCTIONAL MEASUREMENT.—In the field of educational testing and measuring there is at present a noticeable attempt to apply the point of view of organismic psychology to the evaluation of pupil growth. In fact, "evaluation" is now the word, and its implications are significant enough to merit a conscious shift in emphasis in the measurement field. Like all changes in educational terminology, the word soon becomes fashionable even though the underlying meaning is little understood or applied. It is quite evident today that, in spite of the talk about "evaluation" and the broader base upon which systematic estimates of pupil growth may be developed, the test-makers are still doing business at the same old stand.

As a middle-of-the-road exposition of the place of evaluation in contemporary education, *Tests and Measurements in the Improvement of Learning*,[1] by Ernest W. Tiegs, dean of the University College and professor of education at the University of Southern California, provides a sound, practical introductory textbook that will prove useful in beginning courses in educational measurement and helpful to supervisors working with young teachers. The educational writings of Tiegs have always been characterized by a concern for the practical problems of the average teacher.

[1] Ernest W. Tiegs, *Tests and Measurements in the Improvement of Learning*. Boston: Houghton Mifflin Co., 1939. Pp. xxii+490. $2.75.

The point of view permeating the book is stated in the early pages:

> The principal function of measurement is the improvement of learning. This objective is attained largely through a systematic diagnosis of the capacity to learn and the particular manner in which individuals learn best; through a determination of immediate learning difficulties for the purpose of guiding instruction; and through periodic appraisals of the success with which learners have attained the objectives of the curriculum as a whole [p. 15].
>
> Measurement is not something added to the teaching-learning process which merely requires more teacher time and energy. It is a vital constituent element of the process itself which saves time and energy by providing the basis for a more adequate direction and evaluation of learning, and relieves teachers from monotonous repetition of activities which are ineffective [p. 16].

About half of the book is given to a systematic discussion of practical approaches to diagnosis and appraisal in elementary, secondary, and higher education. The other half consists of chapters on ability grouping and classification, curriculum building and revision, diagnosis of teaching difficulties, the nature of valid measurement, planning the measurement program, marking and promotion, and reporting and interpreting the measurement program. There is a final chapter of twenty-two pages entitled "Questions and Answers about Tests and Measurements." The answers to many of these questions are much more conservative than one would expect from the general tone of the book as a whole.

This book is definitely not a descriptive catalogue of tests (the author refers the reader to the very adequate bibliographies of Hildreth and of Buros), but many tests are discussed and there is adequate guidance to outstanding tests in each area of education. Statistical procedures and techniques are treated in forty pages.

In accordance with the central theme, the improvement of learning, the emphasis throughout the book is on measurement as a parallel or a continuously guiding process rather than as a terminal or episodic process. Tiegs does not, in this book, make any unique contribution to the heavily documented field of measurement, but he has provided a comprehensive, substantial, and up-to-date guide for beginning students and for young teachers.

JOHN B. WHITELAW

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PRINCIPLES AND FACTS OF HUMAN LEARNING.—If college students are thoroughly acquainted with a field of knowledge and are sincerely desirous of teaching effectively in that field, a study of *Psychology Applied to Teaching and Learning*[1] should be most interesting and helpful. "If the laws and principles of

[1] Coleman R. Griffith, *Psychology Applied to Teaching and Learning: A First Book in the Field of Educational Psychology*. New York: Farrar & Rinehart, Inc., 1939. Pp. xii+650. $2.60.

learning and the subjects which are to be taught are not clothed with interest and even with inspiration, most of their value to the student will be lost" (p. 218). Griffith obviously wanted to prepare a book that would offer students a maximum amount of stimulation and practical help. He has divided the chapters into short sections, and supplied each chapter with titles, subheads, summaries, readings, and exercises. Unfortunately, in spite of the extreme care taken in preparing it, the book seems to be weak in vitality, interest, and concrete suggestiveness.

Throughout the volume the process of learning is discussed from the modern genetic point of view. The author very properly emphasizes the necessity of the teacher's knowing the learner thoroughly, not merely his present characteristics and capacities, but their organization, their development, and their hereditary background as well. He points out repeatedly that the human individual is a complex organism which is constantly adjusting itself to a multitude of internal and external conditions and is, therefore, constantly undergoing changes. The book is fortunately not overburdened with detailed descriptions of experiments and their conclusions, and yet relatively few statements are presented which could not be supported by scientific evidence.

The total range of topics discussed is wide and includes psychology, education, development, maturation, learning, habits, skills, postures, adjustments, attention, interest, emotion, personality, and so on. It is somewhat unfortunate, however, that the author has neglected to state clearly the meanings of some of the terms most frequently used. A reader without previous training in psychology would certainly find it difficult to understand a number of the most thoughtful paragraphs. Up-to-the-minute research workers might object to a few of the statements made in this volume by Griffith on the ground that they overlook the latest research data on the subject, but it would be next to impossible for any one author to keep pace with all the latest findings of research in psychology and education. The book lacks some of the color and inspiration that it should have in order to be most popular and useful, but it does cover the field.

M. R. TRABUE

Pennsylvania State College

INFLUENCES CONDITIONING THE DESTINY OF HANDICAPPED PERSONS.—Since literature in the field of the care and the education of handicapped persons is meager, a volume edited by Merle E. Frampton and Hugh Grant Rowell,[1] of Teachers College, Columbia University, should be of special interest to those who are active in this field, as well as to those who contemplate entering it.

The title of the volume, *Education of the Handicapped*, is rather misleading since, with the exception of the first two chapters, most of the material is de-

[1] *Education of the Handicapped:* Vol. I, History. Edited by Merle E. Frampton and Hugh Grant Rowell. Yonkers-on-Hudson, New York: World Book Co., 1938. Pp. xii+260. $2.40.

voted to the history of the social attitude toward those who are handicapped and to the scientific study of their physical condition rather than to the history of education in each field. However, this social background should be valuable and interesting to educators in the field of special education.

The book has nine chapters. The first gives a brief history of the care of the handicapped as a group. Chapters ii–viii cover specific groups, and the final chapter sums up the preceding reports and suggests future needs, such as the need of research in the various fields, the advancement of personnel training for the work, and the inauguration in schools of education and universities of programs with sufficient resources for training teachers of the handicapped.

The material was supplied by a number of contributors, many of whom are teachers who have devoted their lives to work with handicapped children.

References are not always as definite as they should be. For example, on page 134 reference is made to four national surveys, but the title of the first two surveys and the names of the investigators are omitted. In one case where the source of information is given (p. 135), the percentages do not agree with the source material (*Special Education: The Handicapped and the Gifted*. Report of the Committee on Special Classes. White House Conference on Child Health and Protection. New York: Century Co., 1931). It may be, however, that the figures were taken from an earlier report. On page 138 the author misquotes the White House Conference report when he says that the report states that 100,000 crippled children in the United States have the advantages of special education. On page 5 of that report we read that, while 100,000 crippled children needed special education, only 10,110 were receiving it in public schools and 1,480 in private schools and hospitals, a total of 11,590. Readers who are familiar with the final report of the White House Conference will be startled by such discrepancies. An exact statement of the sources, including issues and pages, would clarify the mind of the reader in some cases.

The book on the whole is well written. It includes a bibliography arranged under two headings, "Books" and "Magazines," with separate lists for each handicap. An excellent index combines references to all types of handicaps.

The editors have entered undeveloped fields where others have feared to tread, and they have produced results which will be a contribution to any library but particularly to libraries in colleges of medical science, social science, and teacher training.

ALICE A. DONALDSON

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THE CONQUEST OF WASTE IN OUR NATURAL RESOURCES.—The social-science field is in need of enrichment material. Certain aspects of this field, particularly aspects of the American scene, have recently received attention in well-written and interesting publications in story form. One of the new books of this type

presents a graphic story of conservation.[1] It is a dramatic review of what America has done with her stores of natural resources and of what the nation plans to do. Stuart Chase, in a Foreword to this story of the conquest of waste in our natural resources, states: "[Miss Glover] has succeeded in making me pretty angry about the destruction of our country. I hope she makes you angry too" (p. xii). This statement indicates the character of *America Begins Again.*

The background material is excellent. It tells the story of a developing, youthful country, embarked on a hitherto untried experiment in government, opening and settling new frontiers, adjusting itself to a mechanical and industrial age, and then to a world-war and a major depression. Against this panorama is focused the theme at hand. The author in the Preface states:

> What I have tried to do in this book is to focus attention upon the great wealth of natural resources with which this new country originally was endowed; the waste to which they have been subjected; and the grave responsibility we face now in building back devastated soil and forests, restoring wild life, cleansing and protecting the waters, guarding the mineral stores against further exhaustion and exploitation [p. xiii].

After the Foreword by Stuart Chase, which graphically sets the stage, and the short Preface by Miss Glover, the following chapters are developed in a vivid, interesting, and scholarly style: i, "The American Pattern"; ii, "The Mothering Earth"; iii, "The Waters, Great and Small"; iv, "Our Forests, Yesterday and Today"; v, "The Earth's Strongbox"; vi, "Wild Life of Earth and Water"; vii, "Power, the Giant of Energy"; viii, "New Ways in an Old Valley"; ix, "The Last Frontier"; and x, "Revising the Pattern."

The organization of each chapter is logical and easy to follow. Understandings which the author expects the reader to gain can hardly escape attention because of the wealth of significant subject matter which is focused on them; that is, the subject content has been selected for its educative as well as its informative value. The presentation is, in every respect, educationally sound.

A bibliography of sixteen pages of well-selected accounts, many of which are primary sources, is worthy of special mention. The volume is attractively illustrated with pictures which have been carefully selected to illuminate the subject content.

America Begins Again is a book that should find a ready and eager market. It can be used in social-science classes in upper elementary or junior high school grades. Its appealing style should hold the attention of pupils of these grades from the time they begin reading until the last chapter is completed. In fact, it is a book that persons of all ages should read.

ROBERT B. WEAVER

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University of Chicago

[1] Katherine Glover, *America Begins Again: The Conquest of Waste in Our Natural Resources.* New York: McGraw-Hill Book Co., Inc., 1939. Pp. xvi+382. $1.76.

READY FACTS FOR THE SCIENCE TEACHER.—Teachers of nature-study or science in the elementary schools will welcome the revised edition of a book[1] which for more than twenty years has been regarded as a classic in its field. Even a cursory glance indicates that the new edition is much more attractive in appearance than the earlier editions; the format has been changed markedly. More careful examination reveals these further changes: Although the organization into five divisions—"The Teaching of Nature-Study," "Animals," "Plants," "Earth and Sky," and "Bibliography"—remains the same, some of the sections have been expanded. The section on "Earth and Sky" contains more material than in the earlier editions, and the Bibliography has been expanded from five to more than forty pages. The section on "Animals" has been made slightly larger by the addition of material on bird migration and on methods of attracting birds. Most of the pictures are new. Sixteen full-page plates have been added. Minor changes in the text have been made in cases where factual statements were found to be inaccurate in the light of recent studies and discoveries.

Those in charge of the revision, so the publishers state in the Foreword, considered remaking the book to bring its discussion of techniques of teaching and its specific suggestions for lessons more nearly in harmony with recent practices in elementary science. They decided against any such radical change. The section concerning methods of handling the material and the lessons accompanying each block of content remain unaltered.

The wisdom of the decision to make no change in the discussion of techniques and general philosophy is open to question. The section on techniques is interesting as a picture of one stage in the development of elementary science, but it does not have much to offer in the way of practical suggestion. The science of the elementary school today is neither the formal science that the author argues against nor the nature-study that she advocates. The lessons—largely independent of one another—concerning specific kinds of plants and animals are out of harmony with the modern practice of dealing with larger areas of content material. Perhaps the most valuable feature of the discussion of methods and of the representative lessons is the emphasis on firsthand experience.

Even though in the minds of many the nature-study approach exemplified is outmoded, the informational material which makes up the bulk of the book's 938 pages will be recognized by all as an excellent source of information concerning the subjects with which it deals. To the primary teacher who, following a plan of utilizing incidental experiences, may at a moment's notice need information about a May fly or a Cecropia moth or a quartz crystal, the book is invaluable. The discussions are not only accurate but entertaining. The teachers of higher grades who have their material organized in units centered in science concepts will find in the book much concrete illustrative material. The

[1] Anna Botsford Comstock, *Handbook of Nature-Study*. Ithaca, New York: Comstock Publishing Co., Inc., 1939 (revised). Pp. xx+938. $4.00.

Bibliography is excellent. All in all, the book is one which, as a source book of information rather than as a guide in methods of teaching, no teacher of nature-study or science in the elementary schools can afford to be without.

BERTHA M. PARKER

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CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

BAILEY, EDNA W., LATON, ANITA D., and BISHOP, ELIZABETH L. *Studying Children in School.* New York: McGraw-Hill Book Co., Inc., 1939 (second edition). Pp. viii+182. $2.00.

BUSWELL, G. T. *Remedial Reading at the College and Adult Levels: An Experimental Study.* Supplementary Educational Monographs, No. 50. Chicago: Department of Education, University of Chicago, 1939. Pp. x+72. $1.00.

BUTTS, R. FREEMAN. *The College Charts Its Course: Historical Conceptions and Current Proposals.* New York: McGraw-Hill Book Co., Inc., 1939. Pp. xvi+464. $3.00.

COOKE, DENNIS H. *Administering the Teaching Personnel.* Chicago: Benj. H. Sanborn & Co., 1939. Pp. xiv+348. $2.40.

CUNNINGHAM, K. S., MCINTYRE, G. A., and RADFORD, W. C. *Review of Education in Australia, 1938.* Australian Council for Educational Research. Melbourne: Melbourne University Press, 1939. Pp. 254.

DIX, LESTER. *A Charter for Progressive Education.* New York: Teachers College, Columbia University, 1939. Pp. 108. $1.60.

DOBBS, ALMA A. *Teaching Wholesome Living in the Elementary School.* New York: A. S. Barnes & Co., 1939. Pp. xiv+304. $2.50.

ESPY, HERBERT G. *The Public Secondary School: A Critical Analysis of Secondary Education in the United States.* Boston: Houghton Mifflin Co., 1939. Pp. xii+596. $2.80.

HAMILTON, JAMES ALEXANDER. *Toward Proficient Reading.* Claremont, California: Saunders Press, 1939. Pp. x+152. $2.00.

HUNT, LEILA WALL. *The Child in the Home.* New York: Prentice-Hall, Inc., 1939. Pp. xii+260. $2.50.

MCKEE, PAUL. *Language in the Elementary School: Composition, Spelling, and Writing.* Boston: Houghton Mifflin Co., 1939 (revised). Pp. xii+500. $2.25.

Recent Trends in Reading. Proceedings of the Conference on Reading Held at the University of Chicago, Vol. I. Compiled and edited by William S. Gray. Supplementary Educational Monographs, No. 49. Chicago: Department of Education, University of Chicago, 1939. Pp. x+366. $2.00.

Reorganizing Secondary Education. Prepared by V. T. Thayer, Caroline B. Zachry, and Ruth Kotinsky for the Commission on Secondary School Curriculum. New York: D. Appleton–Century Co., Inc., 1939. Pp. xvi+484. $2.75.

Science Instruction in Elementary and High-School Grades. By Members of the Faculty of the Laboratory Schools of the University of Chicago. Publications of the Laboratory Schools, No. 7. Chicago: Department of Education, University of Chicago, 1939. Pp. viii+232. $1.75.

STALEY, SEWARD C. *Sports Education: The New Curriculum in Physical Education.* New York: A. S. Barnes & Co., 1939. Pp. viii+326. $2.50.

WHEELWRIGHT, LORIN F. *An Experimental Study of the Perceptibility and Spacing of Music Symbols.* Teachers College Contributions to Education, No. 775. New York: Teachers College, Columbia University, 1939. Pp. xiv+116+visual perception test. $1.85.

WITTY, PAUL, and KOPEL, DAVID. *Reading and the Educative Process.* Boston: Ginn & Co., 1939. Pp. x+374. $2.50.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

The Alice and Jerry Books, Reading Foundation Series. *Through the Green Gate* by Mabel O'Donnell. Evanston, Illinois: Row, Peterson & Co., 1939. Pp. 192. $0.88.

BEAUCHAMP, WILBUR L., MAYFIELD, JOHN C., and WEST, JOE YOUNG. *Science Problems for the Junior High School,* Book III. Chicago: Scott, Foresman & Co., 1939. Pp. x+756. $1.68.

BENNETT, MARGARET E., and HAND, HAROLD C. *Trails to Self-Direction:* Series I To Accompany *School and Life,* pp. 143, $0.40; Series II To Accompany *Designs for Personality,* pp. 80, $0.24; Series III To Accompany *Beyond High School,* pp. 47, $0.24. New York: McGraw-Hill Book Co., Inc., 1939.

CASSELL, MABEL V., OBERHOLTZER, E. E., and BRUNER, HERBERT B. *Language Arts for Modern Youth:* Book I, pp. xx+410; Book II, pp. xx+426; Book III, pp. xviii+428. New York: Charles E. Merrill Co., 1939.

Children's Voices: Creative Writings of Boys and Girls. Compiled by Bertha E. Roberts and Aneta T. Beckman. New York: Silver Burdett Co., 1939. Pp. viii+184. $1.48.

EMBREE, EDWIN R. *Indians of the Americas: Historical Pageant.* Boston: Houghton Mifflin Co., 1939. Pp. xii+260. $2.75.

FORBES, ANITA P., and SMITH, ALBERT S. *Modern Verse,* Book I. New York: Henry Holt & Co., 1939 (revised). Pp. xxii+298. $0.96.

GATES, ARTHUR I. Gates Reading Readiness Tests. New York: Teachers College, Columbia University, 1939. $0.25 (specimen set), $3.75 per hundred.

HART, WALTER W., and JAHN, LORA D. *Mathematics in Action,* Book II. Boston: D. C. Heath & Co., 1939. Pp. x+374. $0.96.

Health and Physical Education Class and Record Book. Prepared by Hugo Fischer. New York: A. S. Barnes & Co., 1939. $0.50.

Heath Workbook in General Mathematics, Book I, 72 lessons; Book II, 72 lessons. Boston: D. C. Heath & Co., 1939. $0.24 each.

The Heritage of America: Readings in American History. Edited by Henry Steele Commager and Allan Nevins. Boston: Little, Brown & Co., 1939. Pp. xxiv+1152. $2.40.

Interpreting Science: Book I, *Understanding Our Environment* by Franklin B. Carroll, pp. x+438, $1.48; Book II, *Understanding Our World* by Franklin B. Carroll, pp. xii+554, $1.56; Book III, *Understanding the Universe* by Franklin B. Carroll, Frank A. Rexford, and Henry T. Weed, pp. xx+712, $1.68. Philadelphia: John C. Winston Co., 1939.

LATON, ANITA D., and BAILEY, EDNA W., with the assistance of JOSEPH SCHWAB (based on material originally prepared by Gertrude Wylie Diederich). *Suggestions for Teaching Selected Material from the Field of Genetics.* Bureau of Educational Research in Science, Monograph No. 1. New York: Teachers College, Columbia University, 1939. Pp. viii+66. $0.50.

MARRAN, RAY J. *Table Games: How To Make and How To Play Them.* New York: A. S. Barnes & Co., Inc., 1939. Pp. 122. $1.50.

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